An Investigation of the Effect that the Availability of Legitimate Channels for Acquiring Digital Music has on Piracy in South Africa

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Stuart Hope

Abstract

The problem of music piracy has been around for many years and costs the global economy millions of dollars annually. In recent years, advances in technology have facilitated more efficient methods for disseminating music in non-physical (digital) form by means of peer-to-peer networks and the internet, often without cost. The widespread practice of digital media piracy has been implicated as the major driving force behind the sharp decline in music sales over the last decade. Despite this, recent industry reports offer evidence of a gradual increase in music sales, specifically of digital albums. It is suggested that this growth is driven by the increasing number of available legitimate sources of digital media in the global marketplace.

A number of these legitimate download (and streaming) services have recently become available to South Africans and offer a valid alternative to piracy. As such, this research presents an investigation into the effect that these legitimate channels have on South Africans' digital music acquisition habits.

The relative awareness (and adoption of) a number of legitimate services amongst South Africans have been investigated ("iTunes" - download, "Deezer", "YouTube" – streaming) and contrasted against a popular source of contraband ("The Pirate Bay" website).

Factors often cited by literature ("Risk", "Price", "Convenience" and "Availability") have been incorporated into a conceptual model employed by this research to measure the influence of these elements on South Africans' intention to practice digital music piracy.

Data was collected by means of a web-based survey instrument and enriched by a limited number of interviews with South African digital music consumers and musicians.

Key findings of this research are that South Africans tend to believe that digital music piracy is wrong and they acknowledge some risk of being caught and prosecuted for participating in the practice. Most respondents assert that they have the necessary technical abilities required to locate and download contraband from the internet.

This research found that respondents are willing to share their media, both legitimate and illegitimate with their peers and that the practice of digital music piracy is considered socially acceptable in South Africa.

Table of Contents

Table of Figures

List of Tables

Appendices

1 Introduction

The problem of music piracy has been around for many years and costs the global economy millions of dollars annually (Siwek, 2007). These losses come in the form of lost jobs in industries such as those of manufacturing and retail and it is argued that if piracy is rampant, record companies will not be able to invest money in developing new talent (Peitz & Waelbroeck, 2005). In recent years, advances in technology have facilitated more efficient methods for manufacturing and distributing pirated goods (Gopal, Sanders, Bhattacharjee, Agrawal, & Wagner, 2004). Software has been developed which has allowed pirates to copy and disseminate music in non-physical (digital) form by means of peer-to-peer networks and the internet, often without cost (Peitz & Waelbroeck, 2005).

The widespread practice of digital media piracy has been implicated as the major driving force behind the sharp decline in music sales over the last decade (Recording Industry Association of America, 2013). Despite this, recent industry reports offer evidence of a gradual increase in music sales, specifically of digital albums (International Federation of the Phonographic Industry, 2013a). It is suggested that this growth is driven by the increasing number of available legitimate sources of digital media in the global marketplace. These avenues include a number of download and streaming services – some of which are currently available to South African users. This research attempts to investigate the impact that these services have on digital music piracy in a South African context. A secondary goal of this research is to ascertain South Africans' feelings towards digital music piracy and to investigate whether the practice is considered socially acceptable.

In order to achieve this, a conceptual model, based on existing literature, has been developed. Hypotheses based upon the model were constructed and tested. Data was gathered by means of a web-based survey instrument as well as by conducting interviews with a few digital media consumers and working South African musicians.

The problem of digital music piracy is introduced and discussed in Section 2 of this paper. In this section, a brief history of the practice is provided along with an analysis of existing literature related to the problem domain. Section 2 identifies some of the key factors reported as influencing an individual's willingness to practise

digital music piracy and examines some related behavioural theory. In addition, relevant South African legislation is introduced and gaps in existing literature are highlighted. Section 2 introduces a number of legitimate alternatives to digital media piracy such as streaming and download services and concludes with the introduction of the conceptual model used by this research.

Section 3, "Research Methodology", introduces the research question and provides an overview of the hypotheses tested by this research. The remainder of this section presents readers with an overview of the research strategy employed by this research. The underlying philosophical underpinnings of the research are discussed along with the adopted sampling and data collection strategies.

A summary of the collected data is presented in Section 4 ("Data Analysis"). This section provides readers with respondent demographics and shows how constructs derived from the conceptual model have been mapped to survey instrument questions. This is followed by Section 5 ("Interpretation of Findings") which presents the results yielded by statistical calculations used to test the hypotheses introduced in Section 3. Finally, Section 6 offers conclusions based upon this research and offers some avenues for further research.

This research revealed that South Africans exhibit a level of awareness, of available digital music acquisition channels consistent with those reported by previous international studies. Analysis of collected data revealed that respondents acknowledge the existence of some risk of being caught and prosecuted for practising digital music piracy and they tend to believe that the practice is wrong. Despite this, respondents indicated a willingness to share their (legitimate and illegitimate) digital media with their peers. The practice of digital music piracy is considered "the norm" amongst South Africans and respondents consider themselves capable of locating contraband on the internet – should they wish to.

2 Literature Review

2.1 A Brief History of Music Piracy

Prior to the 1960s, it was only possible to share music between individuals by transferring the physical recorded media from one person to another. These physical objects, such as vinyl LP (Long Play) records, had to be purchased by one party and passed along to others, one at a time. In 1963, the Compact Cassette was introduced into the marketplace by the electronics company Philips (Andriessen, 1999). This invention, commonly referred to as an audio cassette, provided record companies with another format (other than LPs) for releasing and distributing music. The quality of the music found on these audio cassettes was superior to recordings released on LP as vinyl records were easily scratched. A player's needle, while tracing the path of the LP's recorded audio track, would pick up and play any extra noises or scratches found on the vinyl disk. By 1983, pre-recorded audio cassettes outsold LPs with the Recording Institute Association of America (RIAA) (2013) reporting unit sales of 236.8 million and 209.6 million units respectively.

Along with these pre-recorded audio cassettes, blank cassettes were made available. Individuals initially used audio cassettes to make recordings of voice notes and to make backup copies of their LPs for personal use. Researchers (Janssens, Van Daele, & Vander Beken, 2009) assert that this is the point when piracy became a problem for the music industry as blank cassettes were being used to make illegal copies of legitimate recordings (LPs and pre-recorded cassettes) which could then be sold or freely distributed to friends and family.

The Encyclopaedia Britannica defines piracy as the "*act of illegally reproducing or disseminating copyrighted material, such as computer programs, books, music, and films*" ("Piracy (Copyright Crime)," 2013). In a South African context, in the 1980s and 1990s, products such as pre-recorded music cassettes and LPs were highly priced and had limited availability. This has been attributed to economic boycotts imposed on the country by much of the first world, which opposed the political practices of the ruling party in South Africa at the time (Karaganis, 2011, p. 99). This resulted in music being legally obtained and subsequently copied onto blank audio cassettes for further distribution.

The Compact Disc (CD) was introduced into the marketplace in the early 1980s (Gandal, Kende, & Rob, 2000) and delivered superior sound quality to both LPs and audio cassettes. With this innovation, piracy became more prevalent as users copied their CDs onto blank audio cassettes for personal use or further distribution. A trend of advancing technology delivering both advantages as well as disadvantages to the consumer and industry has been observed as each new innovation (audio cassette, CD) improved of the quality of recorded music while assisting pirates to more easily make copies of the physical media. Towards the latter years of the 1990s, the proliferation of CD burners in home personal computers (PC) facilitated the replication and dissemination of copied CDs (Janssens et al., 2009), the audio quality of which was identical to that found on the original recorded media (Bechle, 2006).

More recently, algorithms employed by software utilities have allowed tracks from commercial CDs to be encoded into compressed MPEG-1 Audio Layer III (MP3) files (Gopal et al., 2004). This process generates small audio files which are easily distributed by means of email or the internet. This innovation has resulted in the establishment of a number of peer-to-peer (P2P) file services on the internet which allow users to connect to one another, forming a private network, to share vast music collections amongst themselves. This has resulted in large-scale digital media piracy (Peitz & Waelbroeck, 2005).

Hill (2007) asserts that "*Digital piracy includes the purchase of counterfeit products at a discount to the price of the copyrighted product, and illegal file sharing of copyright material over peer-to-peer computer networks.*" This definition suitably applies to any number of products traditionally subject to intellectual property (IP) theft such as books, magazines, music and films. In South Africa, digital piracy has been slow to grow due to the generally poor quality of available internet connections as well as the lack of affordable bandwidth (Karaganis, 2011, p. 105). Karaganis predicts that as new undersea internet bearing cables are installed and activated between South Africa and the rest of the world, that the country will benefit from an increase in internet connection speeds. This will result in an increase in available bandwidth capacity which will in turn facilitate a surge in digital media piracy as witnessed in other countries (Van der Byl & Van Belle, 2008).

2.2 The Problem with Digital Music Piracy

Technology has not only assisted musicians in improving their recording processes, allowing them to produce higher quality recordings, but has assisted the digital media pirates too. These pirates are able to make use of technology to produce illegal copies of legitimate media, such as CDs, which are almost indistinguishable from the original product (Bechle, 2006). Traditionally, these parties selling pirated music would have had to distribute their physical counterfeit CDs via flea markets or street corners (Janssens et al., 2009; Sudler, 2013). The internet has allowed these pirates to overcome traditional supply chain constraints (Sudler, 2013) as digital media may be quickly and easily copied onto a PC and distributed by means of websites and P2P file sharing services. P2P file sharing services have been around since the turn of the century, with the first major player being Napster (Choi & Perez, 2007), which allowed users to share their music collections with other users making use of the service across the internet. Napster has subsequently moved away from illegal file sharing and offers a similar legitimate service (Choi & Perez, 2007; Gopal et al., 2004). Currently many users make use of websites such as “The Pirate Bay” (2013) to acquire links to illegal content (Cooke, 2006). The site offers links to (.torrent) files which once downloaded and activated, allow peers to automatically locate and connect with one another across the internet in order to share files.

2.2.1 The Cost of Digital Music Piracy

In a report titled “The True Cost of Sound Recording Piracy to the U.S. Economy”, Siwek (2007) attempts to highlight the impact that digital music piracy has on the United States’ (US) economy. Siwek makes use of mathematical models to estimate that digital music piracy costs the US economy US $12.5 billion per annum. This report claims that 71,060 US jobs were lost in 2005 as a direct result of digital music piracy. Siwek claims that 26,860 of these jobs consisted of individuals working in roles directly related to the recording industry and its related retail partners. Job roles such as musicians, sound engineers and retail staff were reportedly affected. It was estimated that a further 44,200 jobs were lost in other industries as a result of digital music piracy. The report further claims that workers lose US $2.7 billion in salaries and that the US economy loses US $422 million in taxes annually as a direct result of digital audio piracy.

The Recording Industry Association of America (RIAA) has reported a steady decline in the sales of physical music-bearing media such as CDs in the US since 2000 (Recording Industry Association of America, 2013). This sales decline is presented in Figure 1 and shows the steady decline in CD sales from 2000. The highest recorded number of CD sales in the US was in 2000, when 942.5 million units were shipped. A 731.6 million unit drop in sales (per annum) between 2000 and 2012 (210.9 million CDs shipped) has been reported. Much of this sales attrition has been attributed to digital music piracy (Arnab & Hutchison, 2006).

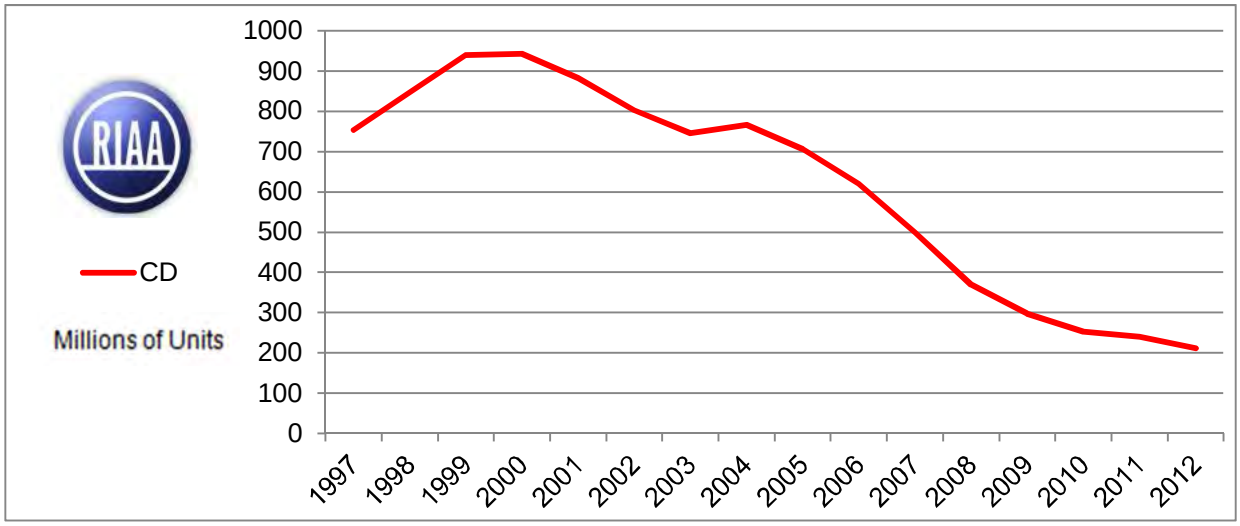

Figure 1: RIAA CD Sales 1997 to 2012

Source: Recording Industry Association of America, 2013

2.3 Legitimate Digital Media as an Alternative to Piracy

Despite the sharp decline in unit sales, the RIAA reports that the sales of digital music through legitimate channels has been steadily increasing in the US since the organisation began tracking digital album sales in 2004 (Recording Industry Association of America, 2013). The RIAA reports that 4.6 million digital albums were sold in the initial year of tracking in the US and notes that digital album sales peaked in 2012, with 116.7 million units being “shipped” over the course of the year (Figure 2).

This positive trend has been emphasised in a recent report issued by the International Federation of the Phonographic Industry (IFPI) which shows an estimated 0.3% increase in global music industry revenue in 2012 (2013a). This 2013 report reveals that 2012 has been the first year, since 1999, in which the music industry has shown positive growth. The IFPI asserts that digital music sales currently account for 34% of all revenue generated by the international music industry with an estimated value of US $5.6 billion.

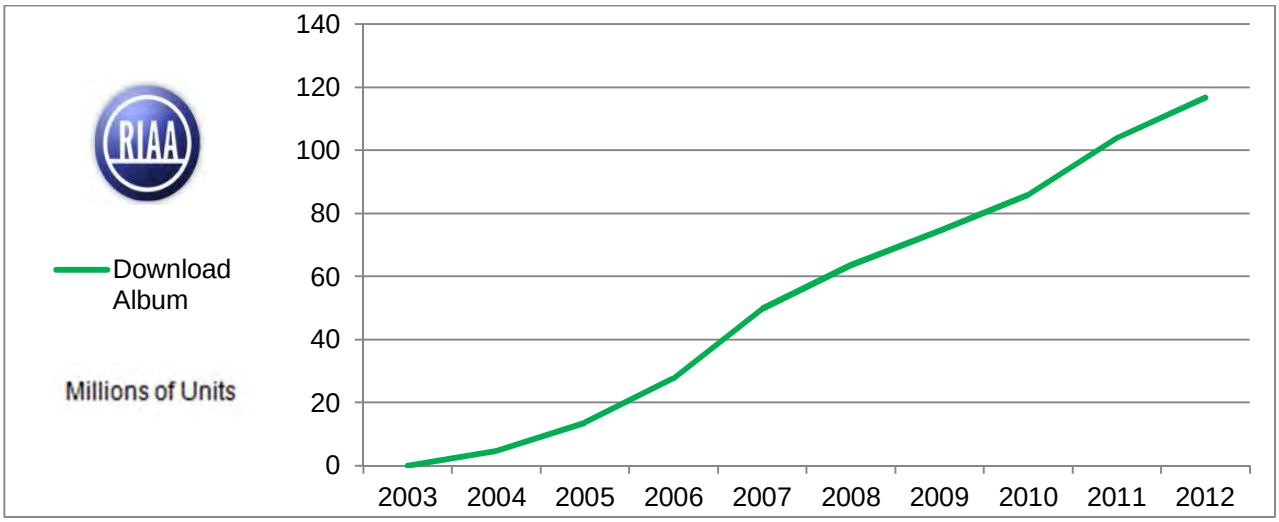

Figure 2: RIAA Digital Album Sales 2004 to 2012

Source: Recording Industry Association of America, 2013

The IFPI is an international organisation which represents the recording industry globally. The organisation has over 1400 members from 66 countries (International Federation of the Phonographic Industry, 2013b). Its stated goals are to promote the value of recorded music, to protect producers of music and to monetise the fruit of their labour. Four South African record companies are currently affiliated with the IFPI. These organisations are Sony Music Entertainment Africa (Pty) Ltd, EMI Music South Africa (Pty) Ltd, Gallo Record Company and Universal South Africa.

While the RIAA reports that 116.7 million digital albums were sold in the US in 2012 (Recording Industry Association of America, 2013), the IFPI reports that this number grows to 207 million (International Federation of the Phonographic Industry, 2013a)

when taking global sales into account. The IFPI reports global sales of 2.3 billion individual tracks. Another growing market is that of subscription-based services, with the IFPI reporting that more than 20 million users make use of such services worldwide. These paid services allow users access to an internet-based archive of streaming music and account for 10% of global digital music revenue. This form of service has shown a 44% growth from 2011.

The recent growth experienced by the music industry has been attributed to the options which are currently available to users for obtaining legitimate digital music, either by streaming or by download (Pfanner, 2013). Digital albums are typically downloaded and saved onto a user's computer or device, allowing the purchaser to retain a copy of the audio files that they have paid for (Adams, 2008). Streaming services typically provide a user with access to digital music and do not allow the user to either download or save music files to their local computers (Cooper, 2010). These legitimate digital music sources are addressed by Frances Moore, the Chief Executive of the IFPI, in her introduction to the report: "*IFPI Digital Music Report 2013: Engine of a Digital World*" (2013a), where she states that:

> *"Today's legitimate services are a compelling alternative to piracy – not just for the industry, but for the consumer too."*

2.3.1 Legitimate Digital Media Services

In terms of user awareness of legitimate sources of digital music, six legitimate services were selected to be investigated by the IFPI. Table 1 provides a list of these services along with the type of service offered (download or streaming) and indicates whether the service is currently available to users within South Africa. The IFPI reports that the highest level of awareness of the selected services amongst users was that of "YouTube", with 90% of respondents claiming to be aware of this service. In second place, "iTunes" from Apple Inc. had a 70% reported level of awareness.

The "iTunes" service, launched in the US in 2003, has sold over 25 billion tracks to date (Apple Inc., 2013c) and has been available in South Africa since December 2012 (Apple Inc., 2012). This service offers consumers the option of purchasing either individual audio tracks (songs) or entire music albums at a lower price than the

physical (CD) counterpart. In terms of price, the United States "iTunes" store typically charges less than a dollar (US 99c) for a single track (US $9.99 for a full album), while in South Africa the price of a single song is usually under nine rand (R6.99 to R8.99) (Apple Inc., 2013b).

Service	Download	Streaming	Available in SA?	URL
YouTube	✔	✔	✔	http://www.youtube.com/ (YouTube, 2013)
iTunes	✔	✔	✔	http://www.apple.com/itunes/ (Apple Inc., 2013a)
Amazon MP3	✔	✔	✘	http://www.amazon.com/MP3-Music-Download/b/ref=topnav_storetab_dmusic?ie=UTF8&node=163856011 (Amazon.com, 2013)
Spotify	✘	✔	✘	https://www.spotify.com/int/ (Spotify, 2013)
Vevo	✘	✔	✘	http://comingsoon.vevo.com/ (VEVO, 2013)
Deezer	✘	✔	✔	http://www.deezer.com/en/ (Deezer, 2013)

Table 1: Available Legitimate Digital Music Sources Reported on by the IFPI

Source: International Federation of the Phonographic Industry, 2013a

PricewaterhouseCoopers (2013) (PwC) asserts that in 2012 the South African music market was worth R2.2 billion and reports sales of physical and digital albums as having values of R1.2 billion and R90 million respectively. PwC reports that the balance of music industry revenue (R925 million) is generated by live performances. Table 2 presents a comparison between a number of options available to South African consumers for purchasing music in both its digital and physical form. Apple's "iTunes" software-based storefront (Apple Inc., 2013b) has been used as the source for digital music. A South African online merchant and a national retail music chain with a physical storefront are represented by Kalahari.com (2013) and Musica (2013)

respectively. Three of the IFPI's (2013a) reported global top selling albums for 2012 (Adele – "21", Taylor Swift – "Red (Deluxe Edition)", Lana Del Rey – "Born to Die"), as well as two recently released (2013) albums (Austra – "Olympia", Black Sabbath – "13") have been selected for the purposes of this comparison. These five items are presented along with the current price being charged for each of these music albums from the selected sources. The data shows that in terms of price, South African consumers are being charged less for a digital music album than its physical counterpart. For comparative purposes, Table 3 provides current P2P statistics for users sharing copies of these albums. This data has been collected from a website which hosts "torrent" files which facilitate the downloading of copies of the music (thepiratebay.org). The "Seeds" column presents the number of unique copies of the album which are currently being shared. The "Seeders" column reflects the number of individual file-sharers who are hosting completed copies of these albums while the "Leechers" column presents a count of the P2P users who are in the process of downloading the album from their peers. Each one of these P2P users (seeders/leechers) represents a potential lost sale.

Artist / Album	Int'l Sales 2012 (m)	iTunes	Kalahari.com	Musica
Adele – 21	8.3	R69.99	R159.95	R169.95
Taylor Swift – Red (Deluxe Edition)	5.2	R139.99	R174.00	R169.95
Lana Del Rey – Born to Die	3.4	R89.99	R156.00	R169.95
Austra – Olympia		R69.99	R192.00	n/a
Black Sabbath – 13		R89.99	R156.00	R159.95

Table 2: Legitimate South African Music Sources / Comparative Pricing

Source: Apple Inc., 2013c; "Kalahari.com," 2013, "Musica," 2013

Artist / Album	Seeds	"Seeders"	"Leechers"
Adele – 21	77	4699	570
Taylor Swift – Red (Deluxe Edition)	50	4270	705
Lana Del Rey – Born to Die	36	4699	457
Austra – Olympia	4	296	13
Black Sabbath – 13	26	4257	170

Table 3: P2P Shared Albums: 15/07/2013

Source: "The Pirate Bay," 2013

2.4 Factors Influencing Digital Music Piracy

The problem of digital music piracy has been extensively investigated by researchers from both commercial organisations as well as academia and their findings have been published in books, reports and conference papers. Research in this field is typically conducted by employing similar methods to those used in the study of software piracy as parallels exist between the two practices (Gopal et al., 2004). Pirates of digital music have adopted similar manufacturing and distribution strategies to those of software pirates as both products were initially distributed by means of physical media and have, over time, become "virtual" products due to their availability in a non-corporeal form (Belleflamme & Peitz, 2010; Cooke, 2006).

Much of this research has attempted to investigate the factors which influence digital music piracy and to understand the reasons why individuals engage in this behaviour. A number of factors have been reported such as; price, availability, convenience, quality, technology and the low risk of being caught. A list of some of these factors is provided in Appendix A along with the research from which the element has been derived.

One of the most frequently reported factors influencing digital media piracy is that of "cost" or "price" (Al-Rafee & Cronan, 2006; Arnab & Hutchison, 2006; Cooke, 2006; Dejean, 2009; Gopal et al., 2004; Halttunen, Makkonen, & Frank, 2010; Harbaugh &

Khemka, 2010; Hill, 2007; Janssens et al., 2009; Lysonski & Durvasula, 2008; Phau, Teah, & Lwin, 2009; Sinha & Mandel, 2008; Sudler, 2013; Van der Byl & Van Belle, 2008; Veitch & Constantiou, 2011).

2.4.1 Price

Arnab & Hutchison (2006) acknowledge that the price of a legitimate product is often much more than a counterfeit copy. They report that many people have an issue with the affordability of luxury items such as CDs. This affordability factor is addressed by Janssens et al. (2009), who report that counterfeit copies of music CDs are often made available at a low price or are available on the internet for free. Karaganis (2011) asserts that in developing countries such as South Africa, price is a larger factor than in the developed world, due to the (high) cost associated with purchasing legitimate media relative to the average household income. This is consistent with research findings which state that software piracy is often more prevalent in countries with a low income per capita (Gopal et al., 2004). Low income is often cited by students as a reason for their piracy behaviour (Higgins, Wolfe, & Marcum, 2008).

Those parties engaging in digital music piracy often feel that the price of music is too high (Cooke, 2006; Hill, 2007; Karaganis, 2011, p. 105) or that it (music) is overpriced (Van der Byl & Van Belle, 2008). Others have reported that they participated in piracy in order to save money (Van der Byl & Van Belle, 2008) as making use of P2P networks provides users with a wide range of music for free (Halttunen et al., 2010). The cost of music is an issue in South Africa as consumers have low purchasing power (Van der Byl & Van Belle, 2008) relative to first world countries, once exchange rates have been factored into the price of a CD. This is due to much music being subject to international licencing and its associated costs.

2.4.2 The Availability and Convenience of Digital Music

Another reason commonly cited for piracy is that of availability (Arnab & Hutchison, 2006; Belleflamme & Peitz, 2010; Chen, Shang, & Lin, 2008; Gopal et al., 2004; Halttunen et al., 2010; Karaganis, 2011, p. 34). CDs containing musical works are often unavailable in music stores offering a limited range of products or may be inaccessible due to international licencing restrictions (Sudler, 2013). This is

especially the case for relatively obscure artists whose works are not carried by commercial retail chains. With the assistance of the internet, music may be distributed to consumers globally, without them having to visit a traditional brick-and-mortar store. Consumers have the ability to make use of a P2P file sharing service to locate and download digital albums without paying for these. Researchers acknowledge that digital music is easy to locate on the internet (Higgins et al., 2008) and artists' complete discographies are readily available in a convenient format (Van der Byl & Van Belle, 2008).

2.4.3 The Sampling Effect

The practice of "try before you buy" (Ahn & Yoon, 2008; Dejean, 2009; Janssens et al., 2009; Moore & McMullan, 2009), referred to as the *"sampling effect"* (Liebowitz, 2006), whereby music is downloaded and evaluated before the legitimate product is purchased, is often reported (Belleflamme & Peitz, 2010; Hill, 2007). This finding is supported by Dejean (2009) and Safner (2012), who report that parties who regularly make use of illegal means to download music do purchase more legitimate music than those who do not practise piracy. Due to the high cost of legitimate music, individuals may wish to ensure that they get good value for their money. Many parties believe that music piracy is a victimless crime (Halttunen et al., 2010; Lysonski & Durvasula, 2008) and assert that the act of downloading music from the internet is analogous with copying a song off of the radio (Robertson, McNeill, Green, & Roberts, 2012; Sudler, 2013).

2.4.4 Technology Facilitating Improved Audio Quality

Advancements in technology have allowed the music industry to create better recording media. This progress has resulted in a number of media formats, such as LPs and audio cassettes, being rendered obsolete (Peitz & Waelbroeck, 2005). This has impacted consumers as they have to re-purchase their music collections on these new formats as the older technology (LP players, cassette decks, etc.) becomes unavailable. Other technological tools, such as preventative copy-protection mechanisms employed by some CD manufacturers, have been blamed for digital piracy. This "*digital rights management*" (DRM) software placed on some CDs, has been blamed for promoting piracy (Belleflamme & Peitz, 2010; Halttunen et al., 2010) as this technology occasionally makes the physical media disc

incompatible with certain hardware devices (Arnab & Hutchison, 2006). This results in it becoming more convenient for individuals to play pirated music on their devices than an authentic (copy-protected) CD (Belleflamme & Peitz, 2010; Sudler, 2013).

The use of "ripping" software enables users to convert (non-copy-protected) audio CDs into small compressed MPEG-1 Audio Layer III (MP3) files (Gopal et al., 2004). These files (MP3) exhibit no difference in audible quality to the average listener when compared to the source CD (Sinha & Mandel, 2008; Van der Byl & Van Belle, 2008). These MP3 files are easy to store and access and may be played on many devices such as computers, cell phones and MP3 players (International Federation of the Phonographic Industry, 2013a). Pirates often feel that copied digital music does not in any way have a negative effect on the original recording as it is in no way damaged by the copying process (Van der Byl & Van Belle, 2008).

Some music providing services allow users to access, but not own, sound recordings (Bechle, 2006). In terms of its licence agreement, these music tracks, even if they have been downloaded onto the legitimate purchaser's computer, cannot be resold. This is an inconvenience as the physical CD, once bought, may be resold if no longer required or wanted (Peitz & Waelbroeck, 2005). This has resulted in a paradigm shift in terms of the concept of ownership of music, as *physical* media-bearing objects become less prevalent (Higgins et al., 2008).

2.4.5 Social Benefits

Piracy has reportedly been perpetuated due to these parties receiving some form of social benefit for their effort, such as favours (Van der Byl & Van Belle, 2008) or for altruistic purposes (Arnab & Hutchison, 2006). Pirates often believe that they are providing others with a service and will share media in order to increase their social capital or to improve the welfare of their "community" (Phau et al., 2009). Triandis (1989) asserts that over time, members of society may become tolerant of deviations from social norms, resulting in a culture change. This may be the case with CDs, whereby it is deemed socially unacceptable for an individual to steal a physical CD from a store, however, if the individual were to download an illegal copy of the same CD from the internet (or P2P network), it would not be considered "wrong" (Lysonski & Durvasula, 2008).

2.5 Behaviour and Behavioural Theories

Illegal music is not only acquired, and spread, by means of P2P networks or the internet, but through friends and family as well as work or social networks (Arnab & Hutchison, 2006). In their piracy studies, Arnab and Hutchison found that 95% (*n* = 292) of their research subjects admitted to having obtained some form of pirated materials from at least one of these sources. When these respondents were asked whether they would share these illegitimate resources, Arnab and Hutchison found that 68% of respondents conceded that they would continue to redistribute pirated music amongst their friends and family. They found that 40% of respondents would continue sharing files on the internet despite the illegal nature of music file sharing.

The decision to participate in digital media piracy is an ethical one. Many file sharers consider their behaviour to be socially acceptable (Cooke, 2006) and therefore not unethical. Hunt and Vitell (1986, 2006) provide a general ethics theory (Figure 3) which attempts to explain the decision making process followed by individuals when faced with making decisions which have ethical ramifications. It posits that individuals will assess a situation from both deontological and teleological perspectives. An individual's deontological evaluation process is concerned with the "rightness" or "wrongness" of an action while teleological evaluations are influenced by the utility value or consequences of a decision. Hunt and Vitell's theory predicts that individuals make decisions based on their perception of the potential outcomes of their behaviour. The potential (negative) consequences of an action are compared to the benefit gained from an action. These thought processes influence an individual's intentions and subsequently direct that person's behaviour.

A common thread shared by a number of theories and models which have been used by researchers for investigating digital music piracy, is the concept of intention driving behaviour. These psychological theories assist researchers in predicting human behaviour by investigating an individual's attitude and intention towards a subject. In terms of Triandis' Theory of Interpersonal Behaviour (TIB) (Cronan & Al-Rafee, 2007) (Figure 4), attitude is believed to be influenced by a person's evaluation of the possible outcomes or consequences of performing an action. This theory posits that other factors influencing intention include social factors such as subjective norms and affect, which in turn are influenced by emotions.

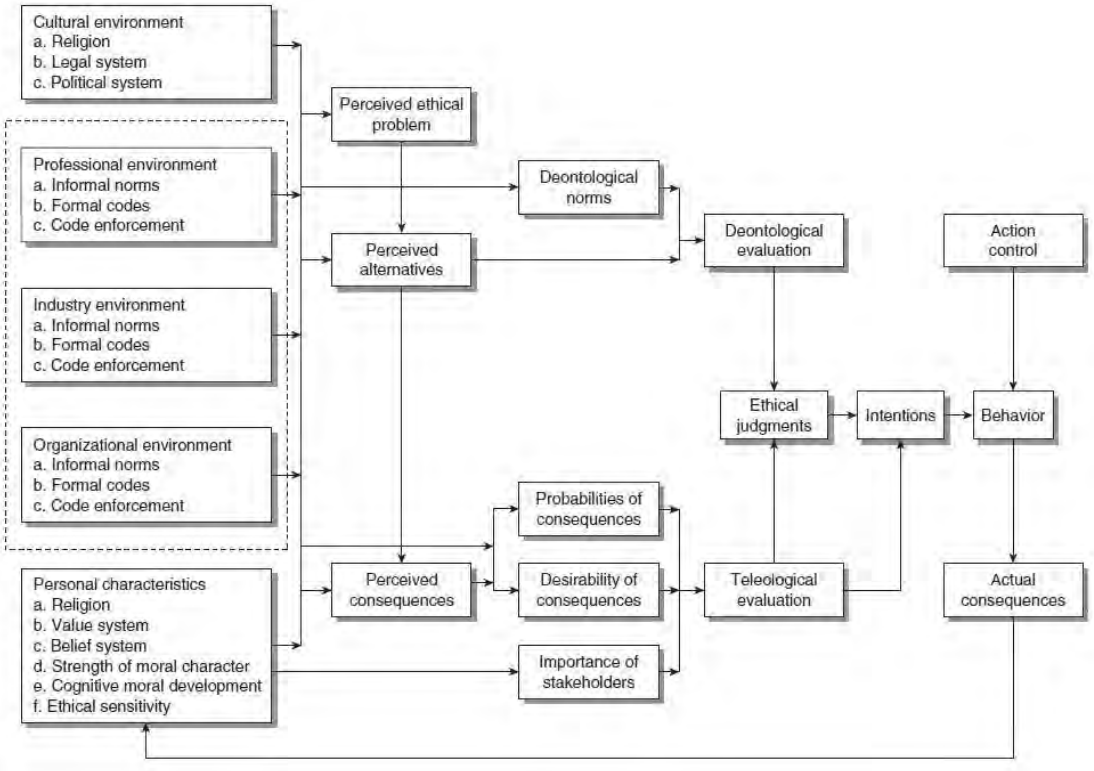

Figure 3: Hunt-Vitell Theory of Ethics

Source: Hunt & Vitell, 2006

Norms could be described as being the implicit social beliefs or behaviour shared by a particular group of people or society (Elster, 1989). Triandis' theory proposes that behaviour is further influenced by a person's habits as well as any other facilitating conditions. Elster (1989) asserts that habits can be considered as a person's personal norms. These personal norms could be developed unconsciously based on experiences associated with performing particular tasks (Bamberg & Schmidt, 2003). As such, Lysonski & Durvasula (2008) assert that future piracy behaviour may be predicted based on an individual's past piracy behaviour as the activity becomes habitual. Positive experiences ("Triandis' Theory of Interpersonal Behaviour," 2000) such as increased utility value gained from pirated goods and the low risk of being caught would encourage the continued practice of piracy.

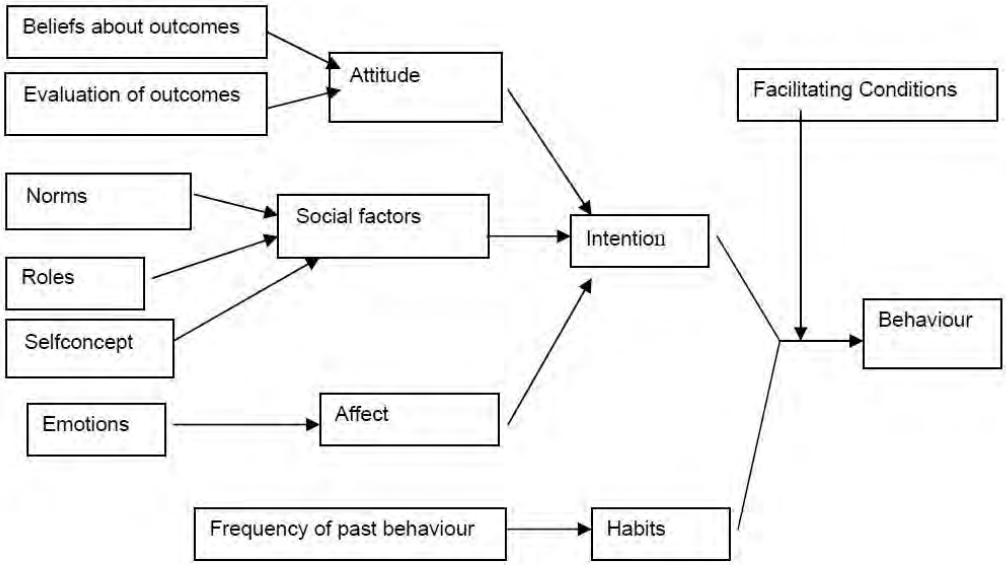

Figure 4: The Theory of Interpersonal Behaviour

Source: "Triandis' Theory of Interpersonal Behaviour," 2000

A similar model for predicting behaviour has been developed by Ajzen. Where Ajzen's Theory of Planned Behaviour (TPB) (Ajzen, 1991) (Figure 5) differs from the work of Triandis is with the introduction of the element of "perceived behavioural control" as a determinant of intention. This perceived behavioural control is defined by Ajzen as an individual's perception of the difficulty or ease of behaving in a certain manner. This implies that individuals who are technically proficient with computers and the internet and do not have an ethical problem with digital music piracy, may be more likely to seek out illicitly available music than those who are not familiar with technology (Moore & McMullan, 2009; Veitch & Constantiou, 2011). TPB and TIB differ with regard to the concept of behavioural control as TPB asserts that the individual is in control of his actions while TIB suggests that control is ceded as the behaviour becomes automatic i.e. habitual (Bamberg & Schmidt, 2003).

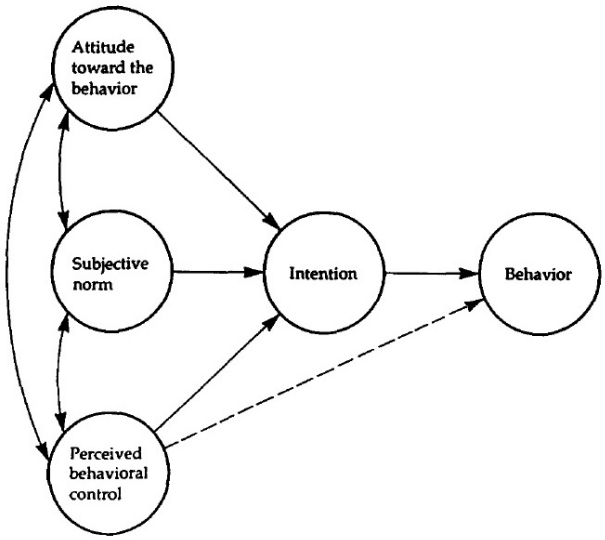

Figure 5: The Theory of Planned Behaviour

Source: Ajzen, 1991

Al-Rafee and Cronan (2006) have developed a Digital Piracy Attitude Model (Figure 6) based on the work of Azjen which has been used to predict individuals' attitude towards software piracy. This model uses moral judgement, individual attributes (e.g. age, gender), affective (emotions resulting from the behaviour) and cognitive beliefs (possible outcomes), perceived importance and subjective norms as predictors of attitude towards digital piracy.

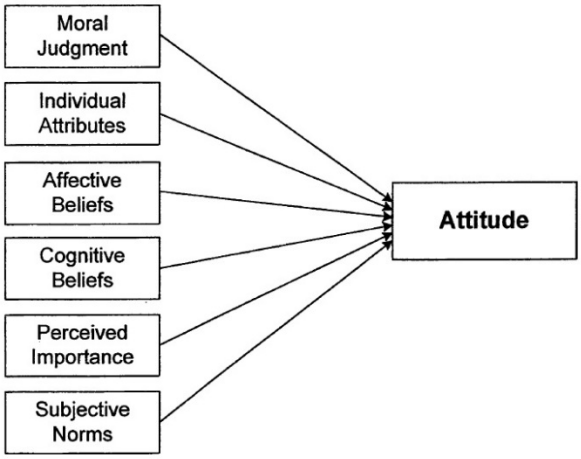

Figure 6: Digital Piracy Attitude Model

Source: Al-Rafee & Cronan, 2006

2.5.1 Subjective Norms

Subjective norms are the prevailing social "rules" shared by members of a society which influence behaviour within that group (Elster, 1989). This factor is common to all of the theories presented (Hunt-Vitell General Theory of Ethics, Theory of Interpersonal Behaviour, Theory of Planned Behaviour, Digital Piracy Attitude Model) and emphasises the importance of "social norms" in influencing the beliefs and behaviour of groups of people. Cooke (2006) asserts that the practice of illegally downloading digital content has become socially acceptable and this behaviour is considered to be the norm. This is consistent with findings reported by a number of other researchers (Amsenga, 2008; Bamberg & Schmidt, 2003; Belleflamme & Peitz, 2010; Cronan & Al-Rafee, 2007; Hill, 2007; Lysonski & Durvasula, 2008; Moore & McMullan, 2009; Phau et al., 2009; Sinha & Mandel, 2008; Veitch & Constantiou, 2011). Researchers assert that individuals are motivated to observe and follow subjective norms based on self-interest and respondents often report feelings of shame should they not conform (Elster, 1989; Trafimow, 2009).

2.5.2 Neutralisation Theory

Individuals will justify their behaviour in terms of a number of elements described by neutralisation theory such as denial of responsibility, denial of injury, denial of victim, condemnation of condemners, etc. (Halttunen et al., 2010). Research has provided evidence that the aspects of denial of injury and denial of victim are often used as rationalisation techniques by digital music pirates for their actions (Moore & McMullan, 2009).

2.5.3 Risk

Lysonski and Durvasula (2008) report that their research revealed that respondents would not steal a physical audio CD but would be willing to download an illegal copy of the music. This is due to the relative low risk of the web-based crime, as there is a perceived concept of anonymity (Higgins et al., 2008) on the internet, while the act of physical theft could be witnessed by many parties, increasing the chances of being caught and punished. Personal ethics seem to differ when considering physical versus digital goods.

Many researchers (Al-Rafee & Cronan, 2006; Halttunen et al., 2010; Higgins et al., 2008; Hill, 2007; Lysonski & Durvasula, 2008; Moore & McMullan, 2009; Steininger & Rückel, 2013; Yoon, 2010) cite "low risk" as a key factor for digital music piracy despite many countries having laws which criminalise the behaviour (Belleflamme & Peitz, 2010). Due to the international nature of digital music piracy, a lack of awareness of international laws and its applicability to citizens of other countries is often reported (Halttunen et al., 2010). As such, Al-Rafee and Rouibah's (2010) research shows that legal action is often not an effective deterrent in developing countries, such as South Africa.

Deterrence theory suggests that the threat of punishment will influence an individual's intention to perform an act (Lebow & Stein, 1989). The theory posits that an individual will be influenced by the certainty of being caught, the severity of the punishment and the swiftness of the imposed sanctions to themselves when deciding on whether to perform an illegal act or not (D'Arcy & Herath, 2011; Sutinen & Kuperan, 1999). Individuals, when faced with such an ethical decision, have to weigh up the potential benefits obtained from the activity against the risk of being caught and punished (Sutinen & Kuperan, 1999). Research has found that individuals perceive the risk of being caught and punished, for sharing digital music files on the internet, as being low despite the existence of laws established to protect copyrights (Van der Byl & Van Belle, 2008).

2.6 Copyright Law

Copyright is the term used to describe the right of an author of a work to exclusively financially exploit the fruit of their labour (Belleflamme & Peitz, 2010; Levenstein & Tucker, 2005). Many countries have adopted copyright laws in order to protect intellectual property and foster the promotion of innovation and creativity (Belleflamme & Peitz, 2010). South Africa's Copyright Act (1978) prescribes six requirements for applying copyright to a work – a work must exist, it should fall within a prescribed set of categories found within the Act, the work should be original and must be made into a material state. Further, the work should not be considered immoral, and a "qualified person" should have made it. South Africa has a number of pieces of legislation which apply to copyright infringements such as the piracy of digital music.

The Counterfeit Goods Act (1997) defines the practice of counterfeiting as:

> *"Without the authority of the owner of any intellectual property right subsisting in the Republic in respect of protected goods, the manufacturing, producing or making, whether in the Republic or elsewhere, of any goods whereby those protected goods are imitated in such manner and to such a degree that those other goods are substantially identical copies of the protected goods."*

The act criminalises the trade of counterfeit goods. In terms of South African legislation, the unauthorised duplication and distribution of audio recordings on the internet is considered a form of cyber-crime (Snail, 2009).

Cyber-crime is criminalised by the Electronic Communications and Transactions Act (2002) with Section 87 addressing forgery and fraud executed by means of a computer. This Act aids law enforcement officials as it makes provision for the use of electronic evidence in court (Hofman, 2007; Snail, 2009). This means that when prosecuting illegal file sharers, Internet Service Providers (ISP) log files would be admissible in court. These logs would allow prosecutors to potentially link a specific computer to an IP (Internet Protocol) address to identify a suspect.

Penalties facing parties found guilty of copyright infringement are prescribed by the Copyright Act (1978). Section 27(6) prescribes a penalty of R5000 or a prison sentence of no longer than three years (or both), for a guilty party, per article found to have been in violation of a valid copyright. One other notable piece of legislation is that of the Companies Act (2008) which, in Section 77(2), could be used to hold a director of company personally liable for any illegal activities such as P2P file sharing found to be taking place within the organisation.

In South Africa, commercial counterfeiters have been the traditional target of law enforcement. Information on a number of "success stories" may be found on the Recording Industry of South Africa's (RiSA) website, however, this resource was last updated in 2006 (Recording Industry of South Africa, 2006). The subjects of many of these cases are the manufacturers or importers of counterfeit goods rather than individuals. This form of publicised enforcement supports the perception shared by many research subjects who do not feel threatened by the authorities, as they

believe that large-scale distributers of pirated goods are more likely to be pursued than small-scale file-sharers such as themselves (Moore & McMullan, 2009).

Besides legal issues, other problems may be encountered by individuals when making use of illegitimate P2P services to exchange digital music. These issues come in the form of viruses, Trojans and malware which may infect and damage their computers or devices (Robinson, 2010).

2.7 Combatting Digital Music Piracy

A number of anti-piracy initiatives have been reported to be unsuccessful (Karaganis, 2011) as society may not consider the distribution of digital media to be unethical behaviour (Al-Rafee & Cronan, 2006; Van der Byl & Van Belle, 2008). A number of researchers offer suggestions which, if implemented, may result in reducing the volume of digital media piracy, one of which is attempting to increase awareness of the harm that such practices cause, such as the loss of revenue, jobs and a decline in the fostering of creativity (Ahn & Yoon, 2008; Al-Rafee & Rouibah, 2010). Many of the suggested mechanisms for reducing digital media piracy focus on deterrents such as attempting to make it more difficult to acquire illegal content (Halttunen et al., 2010; Van der Byl & Van Belle, 2008). These practices are often costly and require much effort, such as the issuing of take-down notices to internet service providers (ISP) (International Federation of the Phonographic Industry, 2013a; Sudler, 2013) and requests to search engines to block copyrighted content (International Federation of the Phonographic Industry, 2013a). These actions are often ineffective as the illegal content providers simply relocate their contraband. The threat of legal action against these infringing parties is also an ineffective deterrent. Research shows that individuals believe that digital media piracy is a relatively low risk exercise (Al-Rafee & Cronan, 2006; Arnab & Hutchison, 2006; Belleflamme & Peitz, 2010; Higgins et al., 2008; Hill, 2007; Janssens et al., 2009; Lysonski & Durvasula, 2008; Makkonen, Halttunen, & Frank, 2011; Moore & McMullan, 2009; Robertson et al., 2012; Sinha & Mandel, 2008; Siponen, Vance, & Willison, 2012; Steininger & Rückel, 2013; Van der Byl & Van Belle, 2008; Veitch & Constantiou, 2011; Yoon, 2010).

Others suggest that organisations positively engage the consumer (Ahn & Yoon, 2008) and make acquiring legitimate digital content easier and more convenient than

making use of the available illegal channels (Belleflamme & Peitz, 2010; Gopal et al., 2004; Janssens et al., 2009; Sudler, 2013). The factor of price has been raised as a key element to capturing the pirate market. Despite the fact that record companies cannot compete with the price of pirate media (free), they could reduce their prices in order to make legitimate content seem more attractive to consumers (Halttunen et al., 2010; Lysonski & Durvasula, 2008). One suggestion is that of taking advantage of the sampling effect by offering free sample files or track previews to entice potential consumers (Belleflamme & Peitz, 2010).

2.8 Identified Gaps in Literature

A significant number of studies on digital media piracy make use of students as its primary sample (Al-Rafee & Rouibah, 2010; Gopal et al., 2004; Halttunen et al., 2010; Robertson et al., 2012; Sinha & Mandel, 2008). A more extensive list of references to research conducted solely with students has been provided in Appendix B. This is likely due to the many researchers who assert that younger individuals are more likely to practise piracy than older parties (Al-Rafee & Cronan, 2006; Al-Rafee & Rouibah, 2010; Gopal et al., 2004; Halttunen et al., 2010; Hill, 2007; Sinha & Mandel, 2008; Taylor, Ishida, & Wallace, 2009; Van der Byl & Van Belle, 2008). Considering that much research has been conducted within universities amongst students**,** a gap in knowledge presents itself. A wider net could be cast in order to obtain data from a more age-diverse sample, i.e. older, working adults. As digital music piracy has been prevalent for more than a decade – and assuming that the "student" population participated in these practices while they were "young" – do these former "students" still conduct themselves in the same manner after having been employed for a few years? Has their attitude towards digital media piracy changed?

The second gap encountered in literature is that of the prevalence of digital music piracy in developing countries such as South Africa (Al-Rafee & Rouibah, 2010). Much of the existing research has been conducted in the United States (Higgins et al., 2008; Lysonski & Durvasula, 2008) and Europe (Makkonen et al., 2011; Siponen et al., 2012; Steininger & Rückel, 2013; Veitch & Constantiou, 2011). Some published research has placed its focus on South Africa such as a chapter in the book *"Media Piracy in Emerging Economies"* (Karaganis, 2011, p. 99). In this book,

digital media piracy in South Africa is profiled in relation to other developing countries such as Russia, Brazil, Mexico, Bolivia and India. This book claims that of these emerging countries, South Africa, is not the greatest culprit of digital media piracy.

A limitation of the South African chapter is that researchers made use of over eight hundred sources of secondary evidence such as broadcast and print stories (Karaganis, 2011, p. 144), collected over the course of four years to draw conclusions. The chapter provides some insight gained from a limited number of interviews from a case study which was conducted in conjunction with the study. This research could be improved by gathering further primary evidence by means of quantitative questionnaires sent to a wider group of respondents. Gathering qualitative data from interviews conducted with parties who practise digital media piracy would assist in triangulating the findings from this prior research. This prior research focused on the distribution of physical copies of pirated goods such as DVDs and CDs rather than digital items such as MP3 audio tracks distributed by means of the internet. These gaps have been addressed by this new research.

2.9 Conceptual Model

This research made use of a conceptual model to test respondents' attitude towards digital music piracy in South Africa in conjunction with their actual reported piracy behaviour. This proposed conceptual model, presented in Figure 7, is derived from existing behavioural theories which have been used in similar research and have been introduced in Section 2.5 of this paper. The model makes use of elements of The Theory of Interpersonal Behaviour (TIB), The Theory of Planned Behaviour (TPB), The Hunt-Vitell General Theory of Ethics (HVE), The Digital Piracy Attitude Model (DPAM) and Deterrence Theory (DT). Table 4 provides a list of some prior research that was conducted with the use of these selected models.

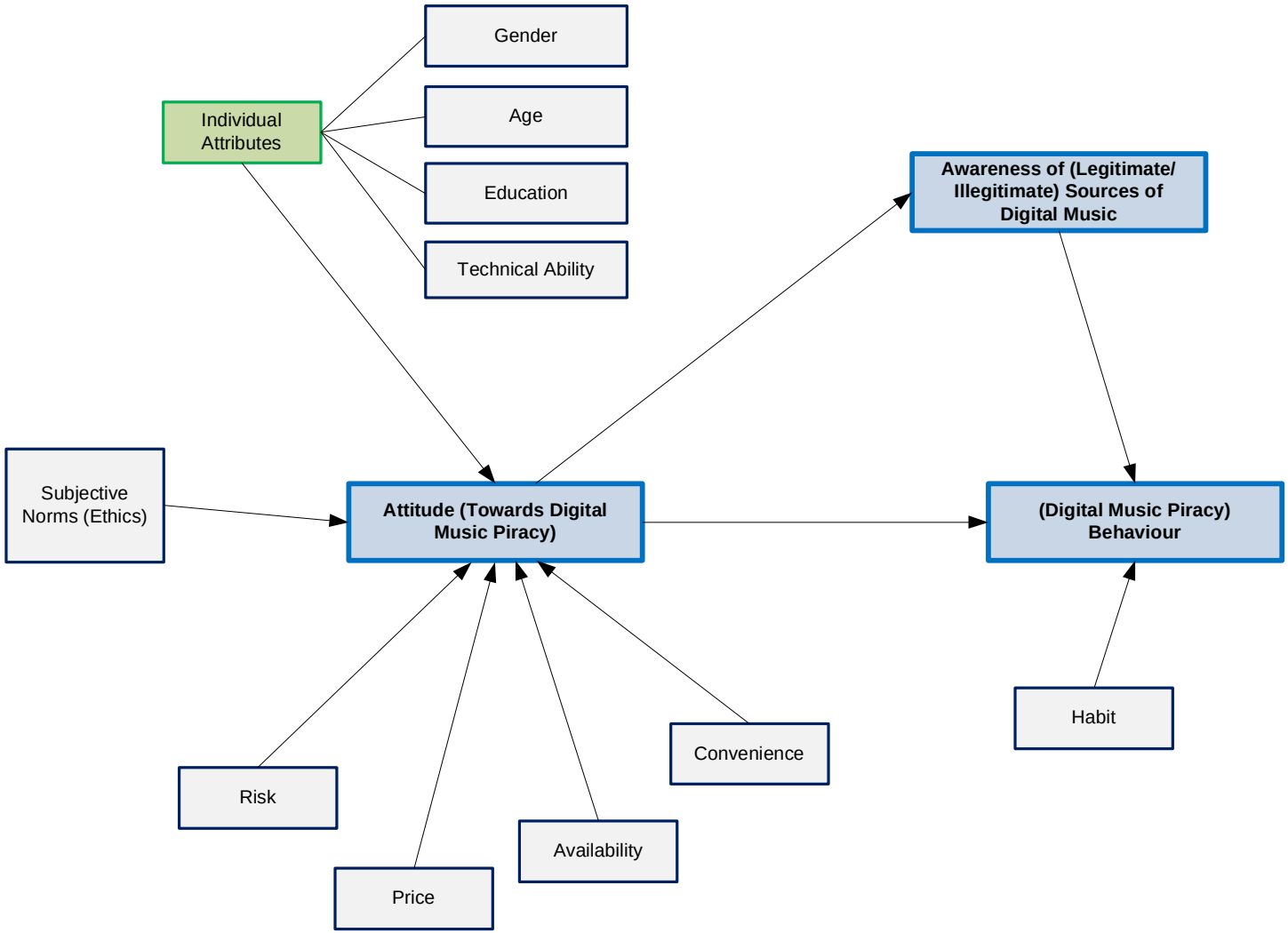

Figure 7: Conceptual Model

Literature (Ajzen, 1991; Hunt & Vitell, 1986, 2006; Robinson, 2010) posits that attitude directs intention which in turn influences behaviour. The measurement of respondents' attitude towards digital music piracy is a key component of this research. The element of "Attitude (Towards Digital Music Piracy)" in this conceptual model is derived from the common component (attitude) found in DPAM, TPB, TIB and HVE.

Author(s)	HVE	TIB	TPB	DPAM	DT
Al-Rafee & Cronan, 2006			✔	✔	
Al-Rafee & Rouibah, 2010			✔		
Bamberg & Schmidt, 2003		✔	✔		
Cronan & Al-Rafee, 2007			✔		
Gopal, Sanders, Bhattacharjee, Agrawal, & Wagner, 2004	✔				
Lee, Lee & Yoo, 2004			✔		✔
Phau, Teah, & Lwin, 2009			✔		
Robertson, McNeill, Green, & Roberts, 2012	✔		✔	✔	✔
Siponen, Vance, & Willison, 2012					✔
Taylor, Ishida, & Wallace, 2009			✔		
Van der Byl & Van Belle, 2008				✔	
Veitch & Constantiou, 2011	✔				
Yoon, 2010	✔		✔		✔

Table 4: Prior Research and Associated Adopted Theory

As attitude is potentially influenced by a person's personal ethics, this element has been added as a construct in the model. Respondents have been investigated to determine the extent of their personal trade-off between their deontological (observation of rules) and teleological (utility value obtained) evaluation processes when deciding on whether to commit acts of digital piracy. This evaluation process

ties in with DT whereby a party has to weigh up the value gained versus the potential risk of being caught and the extent of the sanctions for committing a crime.

The second key element of this model is that of "(Digital Music Piracy) Behaviour" derived from the behaviour component found in TPB, TIB and HVE. Behaviour has been tested by investigating respondents' self-reported involvement with digital music piracy and their adoption of technology such as P2P networks. As behaviour is often influenced by habit, as posited by TIB, this factor (habit) has been tested in terms of actual reported piracy behaviour.

A number of variables have been suggested by literature to influence an individual's attitude towards digital music piracy. This list is presented in Appendix A. From this list, the identified factors of "Price", "Risk", "Convenience" and "Availability" have been used as units for measuring respondents' attitude towards digital music piracy. These elements, introduced and discussed earlier in this paper, have been selected as they were the most frequently cited factors in the surveyed literature.

The element of "Individual Attributes", as introduced by the DPAM, has been measured in terms of respondents' gender, age, level of education and technical ability. The "Age" component was significant as this research attempted to gather data from a sample which has not been extensively investigated. Similar studies tend to focus on students (Al-Rafee & Cronan, 2006; Lysonski & Durvasula, 2008; Taylor et al., 2009) while this research had its focus on an older sample, i.e. working adults. Researchers have debated whether gender is a factor which influences a person's appetite for digital media piracy as studies have produced inconclusive results. Some studies have found that males tend to be more open to the practice of digital media piracy (Gopal et al., 2004; Halttunen et al., 2010; Hill, 2007; Moore & McMullan, 2009) while others have reported no significant differences between the sexes (Makkonen et al., 2011; Moore & McMullan, 2009; Robertson et al., 2012). As such, the element of "Gender" has been considered and measured by this model. Research (Moore & McMullan, 2009; Veitch & Constantiou, 2011) has shown that individuals with advanced technical abilities are more likely to leverage these skills in order to obtain contraband hence the "Technical Ability" and "Education" elements being measured. The "Education" factor is of interest as students have been

reported, by previous research, to practise digital media piracy. Once these former students join the workforce, do they continue with these practices?

The component labelled "Subjective Norms (Ethics)" is an element shared by a number of the adopted behavioural models (DPAM, TPB, TIB and HVE). These norms or shared social "rules" within a society typically influence behaviour within the group (Robinson, 2010). This research attempts to establish whether the practice of digital music piracy is deemed acceptable to society. Respondents have been polled in order to identify their feelings towards these practices.

Finally, respondents' awareness of the available legitimate sources of digital music in South Africa has been measured along with their attitude ("Attitude") towards these. The model attempts to measure the relationship between awareness of these digital media sources and respondents' actual reported adoption of these services. This element has been presented as "Awareness of (Legitimate/Illegitimate) Sources of Digital Music" in order to acknowledge that both sources of digital content are available to consumers.

2.10 Literature Review Summary

Digital media piracy costs the global economy millions of dollars in lost revenue on an annual basis. The problem has been around and has been investigated for over a decade, and has provided researchers with a wealth of available knowledge. Literature provides an insight into a number of factors which influence an individual's attitude towards committing digital music piracy. Of these elements, those which seem to have the most profound effect are price, availability and convenience. Along with these factors, there exists the perception that the consumption and re-distribution of pirated digital music is a socially acceptable practice. Advancements in technology enable pirates to reproduce and distribute digital contraband more quickly and efficiently than its physical counterpart. These factors, combined with acts of digital piracy (e.g. making use of P2P networks) being perceived as "low risk" activities where participants do not fear the repercussions of their actions, have been attributed to the high piracy rates found internationally by both commercial and academic researchers. Amongst research subjects, this behaviour is considered the norm, despite the existence of many legal deterrents.

This literature review has presented an investigation of existing behavioural models in order to identify factors which influence an individual's digital music piracy behaviour. As attitude has been shown to drive behaviour, factors which have an influence on this have been investigated. Awareness of an issue often informs an individual's attitude towards the issue. In order to combat digital music piracy, awareness of the availability of legitimate means of acquiring digital music could be increased. This is particularly relevant in South Africa as these services (e.g. "iTunes", "Deezer") are slowly being made available to local consumers. Literature suggests that legal services should be easy to use and should offer consumers a well-priced and convenient alternative to piracy. The price of digital music albums in South Africa has been investigated and evidence has been presented which demonstrates that these virtual items have a lower price point than the equivalent physical counterpart (CD).

A gap in literature presented itself in that much of the existing digital media piracy research has been conducted amongst students enrolled in tertiary institutions such as universities in the United States or Europe. As such, a gap exists where working adults in developing countries may be investigated.

Based on a review of existing literature, a conceptual model has been developed which has been used to measure respondents' attitude towards digital music piracy as well as their involvement in the practice. This research employs this model to gauge South African respondents' awareness of some of the legitimate and illegitimate services available to themselves (e.g. "iTunes" – digital downloads, "Deezer" and "YouTube" – streaming, "The Pirate Bay" website – "piracy") as well as their attitude towards adopting (and making use of) these services.

At its core, this research sought to establish whether the availability of legitimate digital music services had an influence on an individual's willingness to acquire illegally pirated digital music.

3 Research Methodology

3.1 Research Question

Literature reveals that digital media piracy is a practice which occurs globally, fuelled by technological advancements which have enabled individuals to more quickly and efficiently share illicit media by digitising legitimate physical audio bearing media such as CDs. These digital files are distributed on the internet by means of peer-to-peer networks for free. This practice costs businesses millions of dollars in lost revenue annually and affects the global economy in terms of lost jobs in the manufacturing and retail sectors. Literature posits that digital media piracy results in lost sales (Recording Industry Association of America, 2013), however, recent industry reports provide evidence that music sales are slowly increasing due to the increased number of avenues available to consumers for the acquisition of legitimate digital media (International Federation of the Phonographic Industry, 2013a).

With this in mind, the primary aim of this research has been to establish whether the availability of legitimate channels for acquiring digital music has had an effect on (digital music) piracy in a South African context. In order to achieve this goal, this research attempted to investigate respondents' awareness of the availability of some of the legitimate channels for acquiring digital music, such as streaming and download services, currently available to South Africans. It further attempted to establish whether respondents made use of these legitimate services rather than available illegitimate channels. Respondents' attitude towards digital music piracy has been investigated along with their reported behaviour regarding the practice. Common factors, reported by literature, that influence an individual's attitude towards digital music piracy such as price, risk, availability and convenience have been measured in the context of a model which has been developed based on previous research (Figure 7).

Thus, the formal research question for this research may be stated as:

What effect does the availability of legitimate channels for acquiring digital music have on (digital music) piracy in a South African context?

3.2 Research Objectives

The core research question posed by this research may be split into the following four sub-questions:

- What level of awareness of legitimate digital music services available to South Africans exists and what is their attitude towards these services?
- Which factors influence South Africans' support of these services?
    - Which of these legitimate services do South Africans support?
- Which factors influence South Africans' attitude towards practising digital music piracy?
- Is digital music piracy considered the prevailing subjective norm amongst South Africans?

3.3 Hypotheses

Hypotheses have been crafted based upon the elements and themes which emerged from a review of existing literature.

Attitude has been shown to drive behaviour (Ajzen, 1991; Hunt & Vitell, 1986, 2006; Robinson, 2010), while a number of factors are consistently cited as facilitating digital music piracy (see Appendix A):

H_1 *Digital music consumers who have a positive attitude towards digital music piracy are likely to practise (digital music) piracy.*

In terms of South African research, sales of physical music (e.g. CDs) have been shown to be much greater than those of digital music (PricewaterhouseCoopers, 2013). International research reports a decline in physical music sales and growth of digital music sales (Recording Industry Association of America, 2013).

H_2 *Digital music consumers have a greater awareness of illegitimate channels and services for acquiring digital music than the available legitimate services.*

H_3 *Digital music consumers have a positive attitude towards available illegitimate services.*

H_4 *Digital music consumers with an awareness of available illegitimate services are more likely to practise digital media piracy.*

Literature reveals a number of factors which influence individuals to make use of illegitimate channels for the acquisition of digital music. Chief amongst these factors are "Risk" (Al-Rafee & Cronan, 2006; Higgins et al., 2008; Veitch & Constantiou, 2011), "Price" (Arnab & Hutchison, 2006; Hill, 2007; Taylor et al., 2009), "Convenience" (Belleflamme & Peitz, 2010; Cronan & Al-Rafee, 2007; Sudler, 2013) and "Availability" (Chen et al., 2008; Liebowitz, 2006; Van der Byl & Van Belle, 2008). A more complete list of references is presented in Appendix A.

H_5 *Digital music consumers believe that the price of digital music available through legitimate channels is too high.*

H_6 *Digital music consumers have a positive attitude towards digital music piracy as albums may be more easily obtained from peer-to-peer networks than from existing legitimate sources.*

H_7 *Digital music consumers do not believe that they could be caught and punished for practising digital music piracy.*

H_8 *The greater availability of digital music from illegitimate sources positively influences an individual's attitude towards digital media piracy.*

The personal characteristics of "Age", "Education", "Gender" and "Technical Ability" have been argued as influencing an individual's propensity to practise digital music piracy. Much research has shown that students have a large appetite for such practices (Al-Rafee & Cronan, 2006; Lysonski & Durvasula, 2008; Taylor et al., 2009) while the element of gender has yielded mixed results (Gopal et al., 2004; Halttunen et al., 2010; Hill, 2007; Makkonen et al., 2011; Moore & McMullan, 2009; Robertson et al., 2012). Respondents with a high level of technical skills have been shown to have a similar appetite for digital media piracy.

H_9 *Technically proficient digital music consumers will have a positive attitude towards digital music piracy.*

H_{10} *Former students, who are now part of the workforce, will retain a positive attitude towards digital music piracy.*

H_{11} *Males have a more positive attitude towards digital music piracy than females.*

The norms observed amongst members of a society inform the manner in which individuals conduct themselves (Elster, 1989) and researchers assert that the practice of digital music piracy is considered acceptable by many research subjects, hence the norm (Cooke, 2006; Cronan & Al-Rafee, 2007; Phau et al., 2009; Sinha & Mandel, 2008). This point is emphasised in South Africa as, for many years, the country was subject to economic boycotts which resulted in international music often being obtained exclusively by means of illegitimate channels (Karaganis, 2011, p. 99).

H_{12} *Digital music consumers consider digital music piracy to be a socially acceptable practice, i.e. the subjective norm.*

Hunt & Vitell's (1986, 2006) Theory of Ethics prescribes that individuals assess ethical situations from both deontological (concerned with rules and "rightness" of action) and teleological (utility value obtained from an action) perspectives. Habits may be developed unconsciously based on experiences, positive or negative, associated with performing particular actions (Bamberg & Schmidt, 2003). Consequently, future piracy behaviour may be predicted based on past piracy behaviour (Lysonski & Durvasula, 2008).

H_{13} *The utility value gained from prior piracy behaviour will positively influence future piracy behaviour.*

3.4 Research Philosophy

In terms of ontology, the researcher has adopted an objectivist stance towards this research as it is believed that social phenomena and its underlying meaning exist independent of the social actors being studied (Grix, 2002). Based on this assumption, a realist approach to this research has been taken as it is believed that knowledge may be observed and measured (Holden & Lynch, 2004). A positivist approach to epistemology has been taken as this research attempts to measure elements of human behaviour in a scientific manner (Grix, 2002). This would assist with the generalisation of findings (Bartlett, Kotrlik, & Higgins, 2001) which may be used to predict social behaviour (Holden & Lynch, 2004).

3.5 Research Strategy

Although the primary goal of this research has been to gather quantitative data by means of a web-based questionnaire in order to make use of statistical methods to analyse the collected data, a limited number of interviews were conducted in order to collect qualitative data. The purpose of these interviews was to enrich the data collected by means of the survey instrument. Hence this research made use of mixed methods for gathering data.

Data collected by this research was compared to existing secondary data, in the form of findings, generated by previous research. Furthermore, data gathered by means of personal interviews allowed the researcher to validate collected quantitative data by means of triangulation (Holden & Lynch, 2004).

Researchers (Farrugia, Petrisor, Farrokhyar, & Bhandari, 2010) assert that research projects could benefit from interviews conducted by the researcher, as interview subjects may provide further insight into the topic being researched. This was found to be accurate in the context of this research, as interview subjects addressed issues which are relevant in South Africa, which may not be relevant in other countries.

With regard to theory development, a deductive approach has been taken (Holden & Lynch, 2004). A hypothetico-deductive approach has been adopted by the researcher whereby concepts, which emerged from a review of existing literature, were crafted into hypotheses which were tested by means of the conceptual model presented in Figure 7. This approach is consistent with similar prior research (Chen et al., 2008; Cronan & Al-Rafee, 2007; Taylor et al., 2009; Veitch & Constantiou, 2011).

3.6 Sampling Strategy

The target population for this research consisted of adult South Africans who had, or would consume digital music. Prior research suggests that students have a greater appetite for digital music piracy than older research subjects (Al-Rafee & Cronan, 2006; Al-Rafee & Rouibah, 2010; Gopal et al., 2004; Halttunen et al., 2010; Hill, 2007; Sinha & Mandel, 2008; Taylor et al., 2009; Van der Byl & Van Belle, 2008). Due to these findings, a population segment of particular interest to this research is that of former students (i.e. graduates) who are currently working and earning a

salary. This segment would assist the researcher in determining whether these individuals continued to practise digital media "piracy" once they had begun to earn money.

The web-based questionnaire (Hope, 2014b) targeted respondents who had either purchased or had an interest in purchasing music in either a physical (e.g. CD) or digital (e.g. MP3) format as well as those wishing to consume music by means of some form of streaming service. Respondents who prefer to obtain their music in a digital form may have either paid for or gained it by means of piracy. Literature (Bartlett et al., 2001; Lee & Baskerville, 2003) asserts that the purpose of survey-based research is to gather data which is representative of the population being investigated in order to generalise findings back to the population from which it is drawn.

For the purpose of this research, the recent PricewaterhouseCoopers (PwC) report "South African Entertainment and Media Outlook: 2013 – 2017" (2013) was consulted for the purpose of estimating the population size. PwC reports 17.2 million "unit sales" for music in 2012 (15.9 million physical, 1.3 million digital) and asserts that the best-selling single sold in excess of 100,000 copies in South Africa.

Bartlett et al. (2001) suggest that when calculating a sample size, a number of factors should be considered, such as the types of questions which the survey will contain. They state that questions posed, where responses are measured on a continuum (e.g. seven point Likert scale), require fewer respondents than those with a dichotomous or categorical (e.g. male, female) scale.

As the survey instrument (Appendix C) contained multiple categories of questions, the researcher made use of Cochran's categorical data formula in order to calculate an ideal sample size (*n*) (Bartlett et al., 2001).

$$n = \frac{(t)^2 * (p)(q)}{(d)^2}$$

This would satisfy the requirements for the categorical scaled questions and provide more than the recommended number of responses for continuous-scaled questions. This formula requires researchers to decide on an acceptable margin of error (*d*) and

alpha level (*t*). An estimate of variance is required and is represented by *p* and *q* in the provided formula. Bartlett et al. (2001) state that for the purposes of educational research, a margin of error of 5% for categorical data (3% for continuous data) is sufficient and suggest an alpha level of 0.5 for a sample size greater than 120. The variance is estimated by calculating the available proportionate responses which could be provided (i.e. $p = 0.5$, $q = 1 – 0.5$). An alpha level of 0.5 was used as the PwC figures provide evidence that the population size could be estimated as exceeding 100,000 based on the sales of the top selling (reported) single. Bartlett et al. (2001) suggest that if the sample size yielded by the formula is greater than 5% of the population, further calculations should be applied. For this research, the yielded value of 384 was deemed ideal.

$$n = \frac{(1.96)^2 * (0.5)(0.5)}{(0.05)^2} = 384$$

Based on this formula, it is estimated that a sample size of 384 respondents would be required in order to achieve a 95% confidence level in the accuracy of the results.

The interviewer conducted interviews with four digital music consumers, two of whom admitted to having practised some form of digital music piracy at some point. These interview subjects represent four distinct digital music consumer types, a “Casual Consumer” who selectively purchases digital media, a heavy “YouTube” (streaming) user, a party who prefers physical media and a P2P user, or “Pirate”. These interviews assisted the researcher with investigating whether the factors which influence digital music piracy practices in South Africa are consistent with those identified by international studies (see Appendix A) and to test the saturation level of these previously reported factors. This research has benefited from a limited number of interviews with up-and-coming South African musicians. These recording artists were questioned on their feelings towards digital music piracy and about their personal experiences with their own work being pirated. Interviews with these parties allowed the researcher to gain a deeper understanding (Farrugia et al., 2010) of the effects of digital music piracy on working musicians in a South African context.

Purposeful sampling was used to identify the South African musicians. Specific criteria were applied to the selection process (Handwerker, 2005). A small number

of musicians meeting the requirements were approached - two of these indicated their willingness to participate. The criteria for these musicians were that they had to have released at least two albums and these albums had to be available in both physical (e.g. CDs) as well as digital form (e.g. MP3). Furthermore, the physical CDs had to have (at least) national distribution (e.g. music stores and online retailers) and the digital albums should be available from a legitimate download service such as Apple's "iTunes".

This research employed a purposeful sampling strategy to gain access to individuals who are reasonably technologically literate. In order to gain access to questionnaire respondents, the researcher initially made use of his professional network. As the researcher is employed by a large national software development organisation, he intended to make use of fellow employees as an initial source of respondents. The software development organisation employs more than 450 technically skilled individuals who are based in Cape Town and Johannesburg. The company specialises in providing software solutions to large corporates in the finance and insurance sectors. Permission was granted by the CEO of the organisation to distribute the link to the online survey to all employees of the organisation by means of an internal email.

An online community (MyBroadband, 2013b) with a specific focus on information technology issues in South Africa had been identified as a further suitable avenue for data collection. This community's website reports that it is the largest online community in the country with one million unique site visitors per month (MyBroadband, 2013a). A posting on a suitable sub-forum on this website provided users with a link (Hope, 2014c) to the web-based survey instrument.

A third avenue for gaining access to suitable respondents came in the form of an academic research organisation known as the South African Society for Research in Music (SASRIM) (2014). The researcher made contact with the chairperson of the organisation who subsequently sent a link to the web-based survey to all of the members of the organisation.

The software development organisation, along with the targeted online community formed the "first wave" of the data collection effort and provided responses from technically skilled subjects. Snowball sampling was employed as a means for

gathering data as survey respondents were encouraged to refer further suitable parties to the location of the online questionnaire (Handwerker, 2005).

In an effort to obtain further responses, the researcher posted the survey link on a popular news website, “News24” (Hope, 2014a), as well as sent it to suitable members of both his social and professional networks such as Facebook (2014) and LinkedIn (2014) respectively. A copy of the cover letter attached to these email messages is available in Appendix G.

A total of 263 survey responses were collected. Of this number, 66 were considered incomplete and subsequently discarded. This provided the researcher with a remaining 197 complete (and valid) questionnaire responses. This number has been deemed suitable ($n > 30$) for performing the statistical tests employed in the data analysis phase of this research project (Cohen, 1990).

Researchers (Lee & Baskerville, 2003) assert that research findings are often generalised back to a population containing elements which may not have been represented by the data collection effort. As such, the findings of this research may be extrapolated back to the population from which the sample has been drawn. A significant percentage of the collected data has been shown to come from the desired segment.

In terms of demographics, 137 males and 60 females completed the survey and the mean age of these respondents was found to fall within the “35 to 39” ($SD = 1.93$) range. The minority (16%) of these respondents indicated that they had no education beyond high school (Grade 12 or Matric) level. The most frequent job title offered was that of “Software Developer” and almost half (47%) of respondents indicated that they are currently employed in the “Information Technology” sector. The mean number of years worked amongst respondents was found to be 15.42 years ($SD = 9.48$). Geographically, a large number of respondents were found to work in the Western Cape (62%). This was more than double the number of those from the second most frequently encountered province, Gauteng (27%). Of the 197 valid responses, 53 respondents indicated their willingness to be interviewed in order to participate further in this research. Of these, six were interviewed – four digital music consumers and two musicians.

A more detailed breakdown of this sample may be found in Section 4 (Data Analysis) and a summary of all collected data has been provided in Appendix E.

3.7 Survey Instrument

A web-based questionnaire (Hope, 2014b) was designed by the researcher. The survey instrument was hosted on the internet by an established online research service provider (Qualtrics LLC, 2014). Publishing the survey instrument on the internet allowed the researcher to maximise the number of potential responses which could be collected and to negate any geographic-based exclusion (Evans & Mathur, 2005) of respondents. A copy of this questionnaire is available in Appendix C. The survey instrument contained questions seeking both categorical and continuous responses. It began with a number of demographic questions (e.g. age, gender) and continued on to capture pertinent data regarding respondents' music consumption practices as well as their awareness of some available (streaming and download) services. The questionnaire proceeded to capture responses rated against a seven point Likert scale, the values of which ranged from "Strongly Disagree" (1) to "Strongly Agree" (7) (Lysonski & Durvasula, 2008). Some questions allowed short textual responses which have been useful for obtaining more "rich" data (Taylor-Powell, 1998). A number of questions were used, or adapted, from prior surveys which were conducted in other countries for the purpose of similar research (Al-Rafee & Cronan, 2006; Cronan & Al-Rafee, 2007; Robertson et al., 2012).

The survey instrument contained a final, optional, section which allowed digital music consumers (or self-acknowledged "pirates") and musicians to supply their contact details should they be willing to be interviewed to further participate in the research. All willing interview candidates were subsequently required to provide the researcher with their written consent (Appendix H) prior to being interviewed.

All interviews were conducted by means of a semi-structured interview script. This interview protocol is available in Appendix D. Each of the interview groups (i.e. digital music consumer, musician) had their own core list of questions. The use of a semi-structured interview script allowed the interviewer the freedom to pursue any new avenues of investigation should they arise (Myers & Newman, 2007). These interviews took place either in person or over the internet by means of Skype

software (Microsoft, 2014). All of the interviews were recorded by means of voice recording software (Applied Voices LLC, 2013).

3.8 Data Collection and Analysis

The data collection effort began with the researcher piloting the questionnaire within the Cape Town branch of the targeted software development organisation. This pilot study provided the researcher with 18 responses. This exercise resulted in some informal discussions with respondents which yielded some useful feedback. Based upon these discussions and a brief analysis of the initial data collected, the survey was deemed suitable for use. As such the instrument was subsequently made available to the remainder of the organisation as well as the general public in an unaltered state.

Once the survey had been closed, all of the collected data (263 responses) was initially exported from the survey software (Qualtrics LLC, 2014) website in comma-separated value (CSV) format. This file was then loaded into Excel (Microsoft, 2010) in order to assess the quality of the collected data. Basic sanitation on this data was then performed. One example of such sanitation is that a single column was manually added to host “Gender” values, as the survey software collected “male” and “female” data in two separate fields. These values were merged into the new column. The data was examined for incomplete records which could invalidate a response. All records that were found to be in an incomplete state were eliminated from the data set, leaving 197 complete records for analysis. Descriptive statistics (mean, median, mode, etc.) were calculated on the collected demographic data in order to gain a basic understanding of the sample. These tests allowed the researcher to obtain an initial summary of the data (Pelham, 2012, p. 34).

The data was then imported into STATISTICA 12 (StatSoft Inc., 2013) for further statistical analysis. The STATISTICA software package was selected as the data wrangling tool as the researcher was able to gain access to the (legally) licensed software via the university and had had some prior experience using it.

The first step of the data analysis stage had the researcher map the data columns used by the survey instrument, for each question, to the constructs being measured within the conceptual model being tested by this research. For each of these

elements, descriptive statistics and histograms were generated in order to gain an overview of the collected data. By the end of this phase, each question and construct had its data analysed and descriptive statistics and histograms (or pie charts) were generated for reference purposes. A full breakdown of all of this collected data is available in Appendix E in a "raw" format**.**

The internal validity of constructs, comprised of multiple questions, was tested by calculating Cronbach's alpha values for each of these. The results of these calculations fell within an acceptable range and thus the question grouping per construct was deemed suitable. The calculations for each of these constructs ("Price", "Technical Ability", "Attitude", "Convenience" and "Behaviour") are provided in Appendix F (*"Conceptual Model Constructs: Internal Validity Calculations"*) for reference purposes.

In order to test the hypotheses proposed by this research, Analysis of Variance (ANOVA), t-tests and Spearman's rank correlation calculations have been employed. ANOVA tests have been applied to test for differences between the groups identified by the constructs "Education" and "Age" (respectively) when contrasted against "Attitude". ANOVA may be used as a test for differences in means measured on a categorical scale having three, or more, possible data groups (Pelham, 2012, p. 36). In this context, both "Education" and "Age" qualify. A t-test, which tests for differences between two means, was used when comparing the constructs "Gender" and "Attitude".

Associations between constructs have been tested by means of Spearman's rank correlation calculations. This results in testing the strength of relationships between elements (Pelham, 2012, p. 35). The results of these tests are presented in Section 4 of this paper. Spearman's rank correlation has been used as it is appropriate for interval data which is not normally distributed (Owen, 2014) as the constructs tested in these cases are measured on a Likert scale with values ranging from "Strongly Disagree" (1) to "Strongly Agree" (7).

All interviews were recorded by means of an audio recording device and subsequently transcribed. These transcriptions were analysed using an "open coding" approach, where themes were identified as they emerged from the text (Hoepfl, 1997). These themes were recorded in a code book. The data acquired

from interviews was used to triangulate the results presented by the online questionnaire.

3.9 Timeframe

This research took place on a cross-sectional timeframe as data was collected at a single point in time, allowing the researcher to observe a snapshot of the research landscape (Hall, 2008). The survey instrument was accessible to potential respondents for a two month period between 31 January and 31 March of 2014.

3.10 Limitations

The primary concern with regard to this research was that of obtaining a suitable number of survey responses (384). An extended time window had been allocated to the collection of data and as such, the researcher continually monitored response numbers and took action accordingly, such as sending out email reminders to contacts as well as making updated posts on the sites (and forums) hosting links to the survey instrument. Despite these actions, the final number of valid responses was found to be 197.

The researcher acknowledges that due to the nature of this research, questionnaire respondents may have been unwilling to admit to engaging in illegal activities. There was a concern that this may have resulted in having few (or no) interview subjects who would be willing to identify themselves as making use of illegitimate digital music acquisition channels. For this reason, the questionnaire and interview scripts were constructed in such a manner as to not alarm respondents, as they are never accused of committing any crime.

A limited number of interviews were conducted for the purposes of enriching the data produced by this research. A larger number of interviews could be conducted, should the researcher pursue this avenue of research in the future.

South African and international music industry sales statistics related to both physical and digital sales have been useful to this research. The researcher requested and was granted access to the Recording Industry Association of America's (RIAA) sales data for (physical and digital) music albums in the United States of America. The available sales data spanned the years 1973 to 2012.

Limited South African sales data from the International Federation of the Phonographic Industry (IFPI) was available to the researcher. The cost of acquiring more detailed South African data from the IFPI would have been GBP 150. South African sales statistics were requested from the Recording Industry of South Africa (RiSA), however, these statistics were ultimately unavailable to the researcher. Fortunately, the researcher was able to obtain a PricewaterhouseCoopers survey that provided some suitable sales data which has been employed in this research.

3.11 Ethical Concerns

All participants in this research did so voluntarily. Due to the nature of this research, the identities of all respondents had to be protected and all responses had to be collected anonymously. Existing literature suggests that the term illegal should not be used in questionnaires as it could dissuade potential respondents from participating in the research (Ipsos MediaCT, 2013). This was taken into account when the survey instrument was developed. Despite this, the researcher did receive some feedback from a number of people who were unwilling to complete the questionnaire due to their fear of potentially incriminating themselves.

There was a concern that survey-respondents would not be willing to provide their contact details for potential interviews. This was found to not be an issue as 53 of the 197 survey respondents indicated their willingness to participate further. Of these, 47 indicated a willingness to participate in the capacity of “Digital Media Consumer”, while three indicated that they were “Musicians”. A further three respondents were willing to contribute in both capacities. All interview respondents have been treated as anonymous and an alias has been used for each contribution arising from their interview. None of the participants objected to having their interview recorded for the purpose of this research.

All data gathered from this research has been stored in a secure location and all electronic documents have been password protected.

4 Data Analysis

The survey instrument yielded a total of 263 responses. Of these, 66 were considered incomplete as data vital to this research had been omitted by respondents. These incomplete responses were deleted from the data set which was to be analysed. The remaining *valid* responses (*n* = 197) have been used for most calculations. The researcher found that a few of the remaining data records had some minor data omissions which have been deemed acceptable in the context of this research. These "missing" data records have been addressed in terms of individual analyses found within this chapter.

This "Data Analysis" chapter has been split into five sections. The first section presents collected demographic data and is followed by respondents' work-related responses. The third section contains an analysis of data relating to research participants' current music consumption habits. Data collected, regarding the awareness and use of a number of available digital music services, is then presented and finally, the constructs being tested by the conceptual model introduced in Section 2 are discussed. The mapping of these constructs to the related survey instrument questions is described along with any statistical tests employed to validate these. The mapping between each analysis and its underlying question(s) has been provided. A full breakdown of all raw data collected by the survey instrument is available in Appendix E, while Appendix F contains a number of preliminary statistical calculations employed by analyses contained within this chapter. Direct references to specific survey instrument questions in this text are represented by the letter "Q" with its related question number. For example, the question representing "Gender" is Q2.

4.1 Demographics

Seventy percent (137) of collected survey responses (*n* = 197) were from males (Q2, "Gender") as presented in Figure 8. The average age (Q1, "Age") of respondents fell within the "35 to 39" (*n* = 197, *SD* = 1.93) range (Figure 9). The majority (62%) of respondents (*n* = 196) were found to work in the Western Cape (Q7, "Geographic Location"). The second most frequent South African province cited was that of Gauteng, which had fewer than half (27%) of the number of responses collected from respondents currently working in the Western Cape. Responses from neither

the Northern Cape nor the Free State were found within the data set and a single respondent (a student) neglected to provide his/her current province. The survey attracted a total of 15 international responses from countries such as Australia (4), Ireland (2) and the United Kingdom (2). On analysis, this distribution was consistent with the researcher's contacts currently residing abroad. This data has been presented in Figure 10.

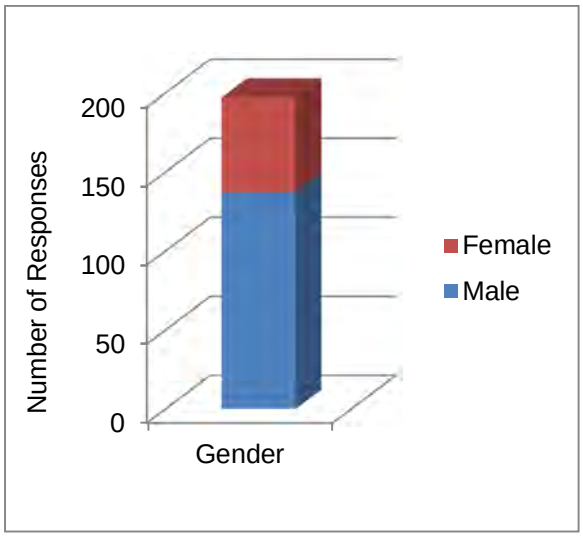

Figure 8: Respondents by Gender

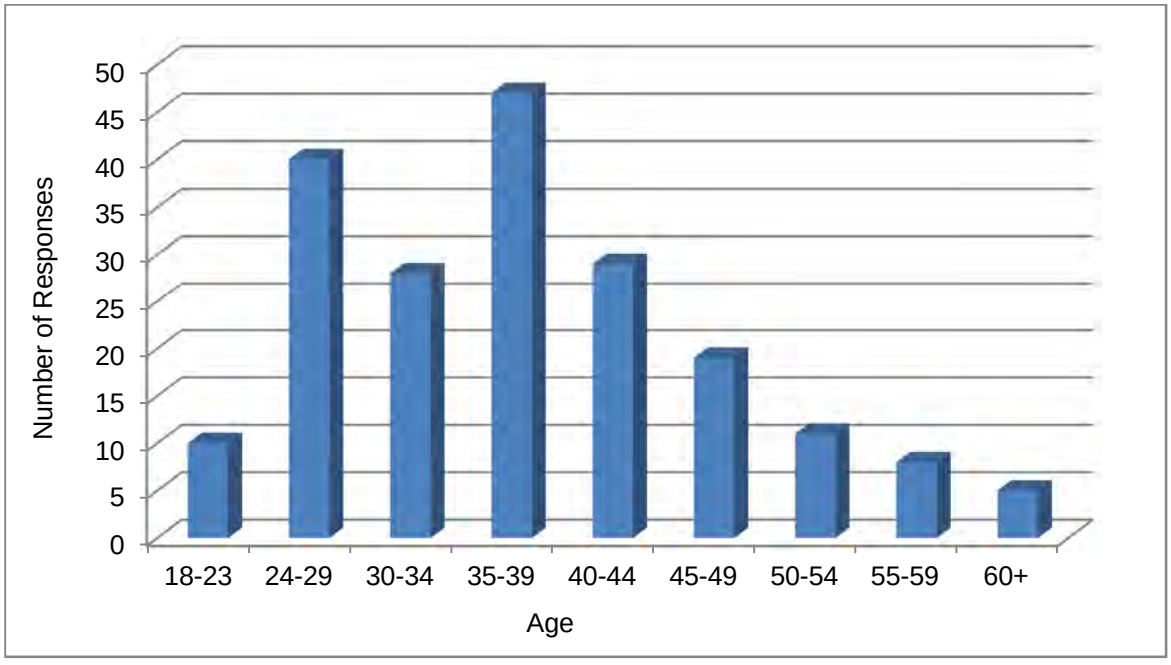

Figure 9: Age of Respondents

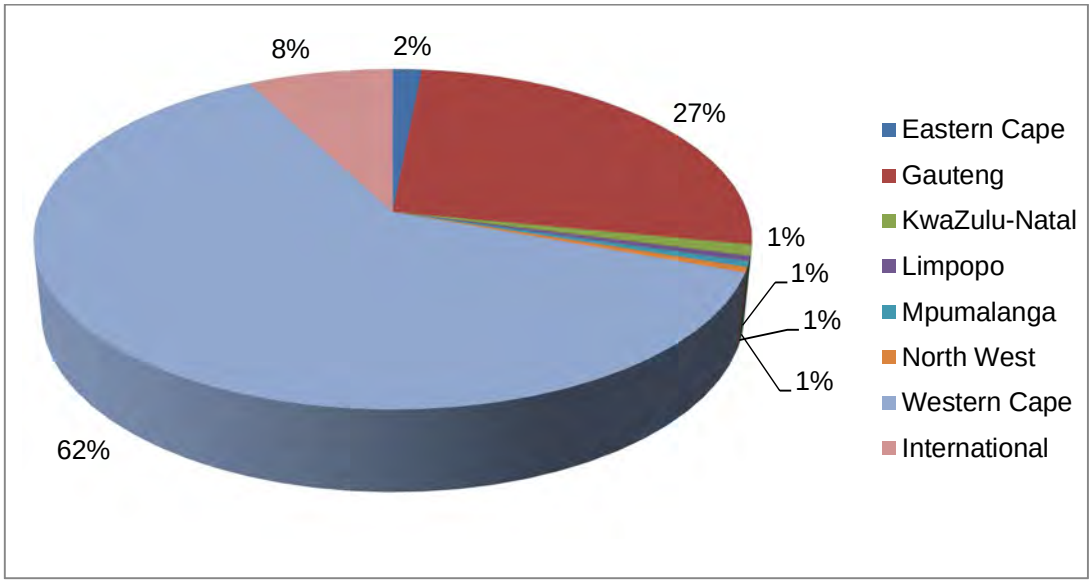

Figure 10: Geographic Location

Figure 11 presents a histogram of respondents' highest reported level of education (Q3, "Level of Education"). More than half (55%) of the respondents (*n* = 197) hold some form of academic degree (Bachelor's, Honours, Master's Degree or Doctorate) and 16% reported having no education beyond high school (Grade 12 / Matric).

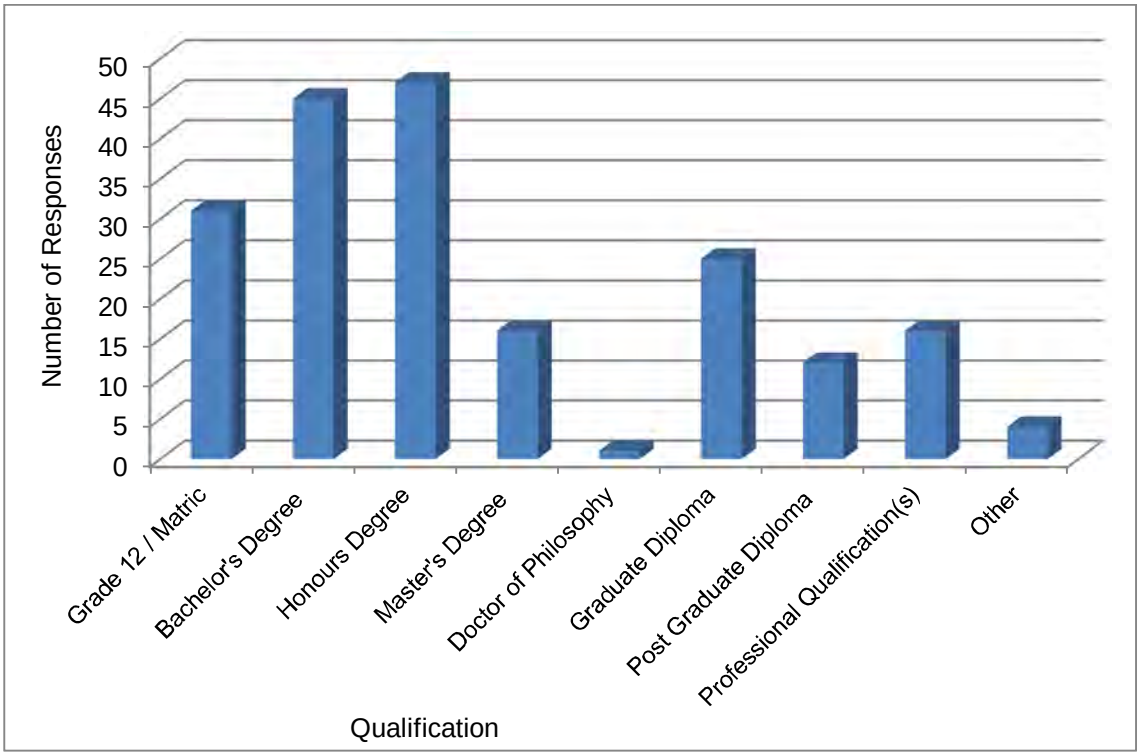

Figure 11: Level of Education

4.2 Work Experience

A single question included in the survey instrument was used to capture which industries respondents worked in (Q6, "Current Industry"). This revealed that almost half (47%) of the responses collected (*n* = 195) F from parties who work in the "Information Technology" sector. The top job title (Q4, "Current Job Title") reported by this group was comprised of those fulfilling variations of the "Software Developer" role, followed by that of a "Business Analyst". The second most frequently provided industry encountered was that of "Financial Services / Banking" (15%). Job titles reported by this group included "Credit Analyst", "Risk Manager" and "Software Architect". Four students counted themselves amongst those working in the "Education" sector along with a number of "Teachers" and "Lecturers". This group yielded a total of 14 respondents. The industries of "Service" and "Telecommunications" were represented by six respondents each. The accompanying pie chart (Figure 12) provides a summary of the top five reported industries relative to the remaining industries ("Other") offered by respondents. Two respondents omitted their current industry. The data revealed that one of these was a student and the other claimed to be unemployed. A total number of 197 job titles were offered by respondents. A comprehensive list of reported industries and job titles is available in Appendix E**.**

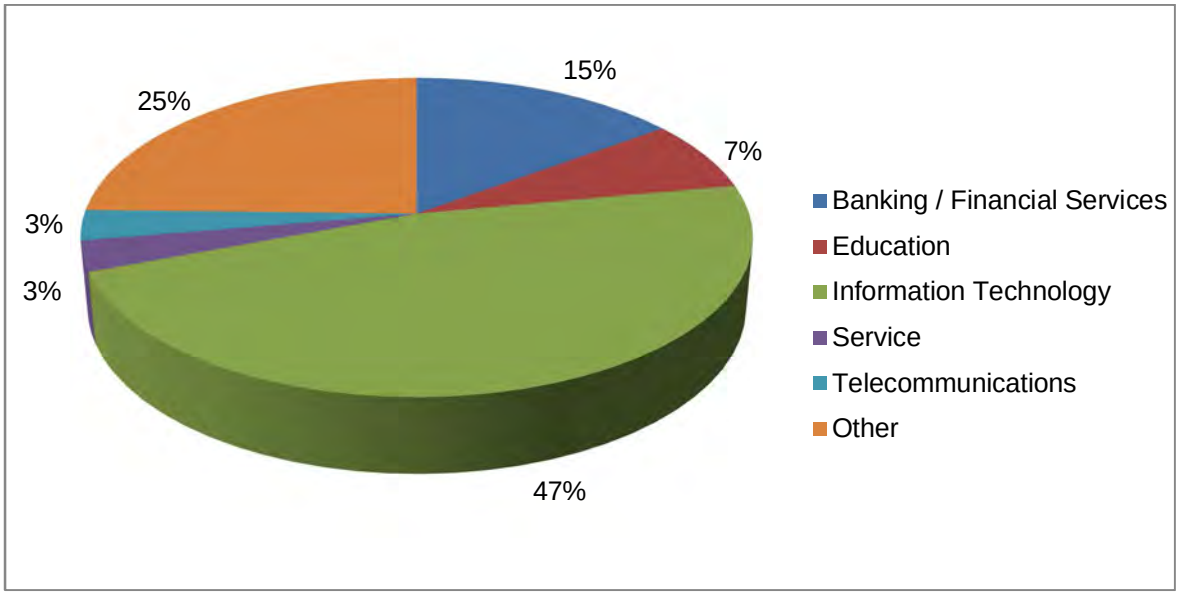

Figure 12: Industry

A total number of 192 respondents provided data for their number of years worked (Q5, “Years Worked”). This resulted in a value of 15.42 for the mean number of years claimed to have been worked amongst respondents (*SD* = 9.48). This data is summarised in Figure 13. The five missing respondents were revealed to be students.

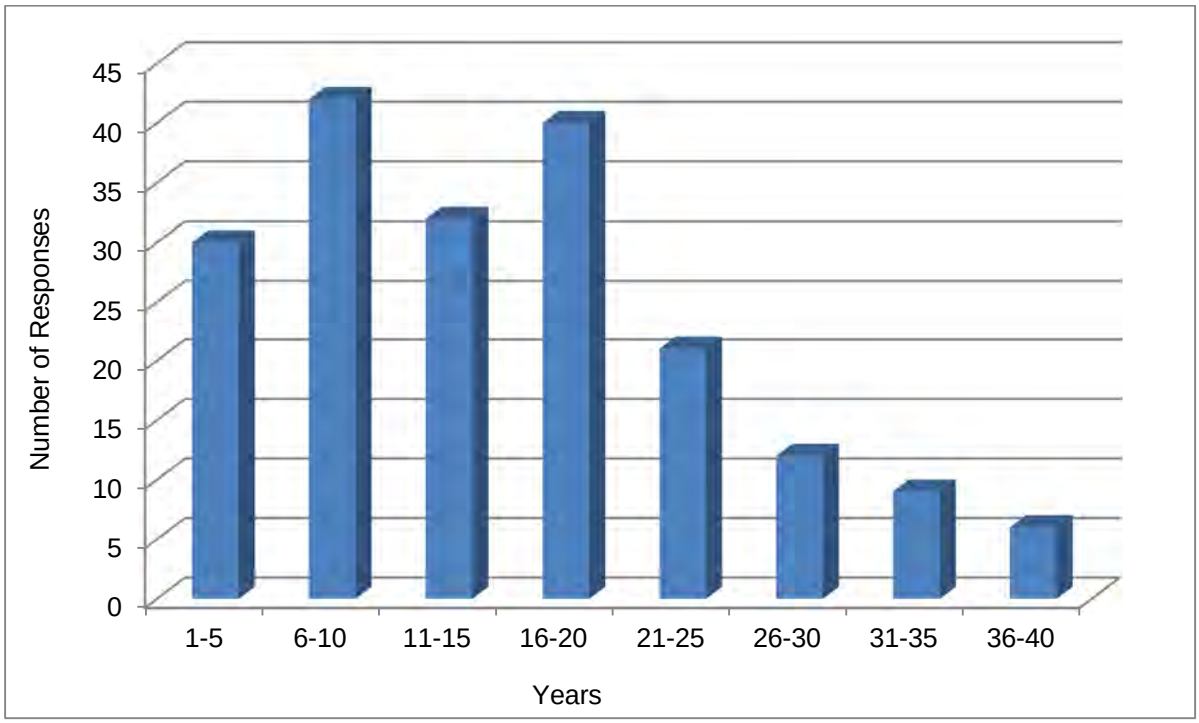

Figure 13: Years Worked

Further input was gathered from six interview subjects who had previously completed the online survey. Two of these identified themselves as being full-time working musicians, the balance, digital music consumers. Table 5 provides a summary of the demographics of these interview participants.

ID	Age	Gender	Education	Job Title	Years Worked	Industry	Current Province	Classification
DMC1	37	Male	Graduate Diploma	Credit Analyst	18	Banking	Western Cape	"Casual Consumer"
DMC2	38	Male	Matric	Software Developer	20	IT	Western Cape	"YouTube" User
DMC3	56	Male	Diploma	Air Freight Manager	38	Logistics	Western Cape	"Physical Media" Preference
DMC4	25	Male	Diploma	Operations Manager	6	IT	Western Cape	"Piracy / P2P" User
M1	35	Male	Bachelor's Degree	Musician	15	Entertainment	Florida, USA	Musician
M2	33	Female	Bachelor's Degree	Musician	15	Entertainment	KwaZulu-Natal	Musician

Table 5: Interview Candidate Demographics

4.3 Music Consumption

This research attempted to gauge how South Africans acquire music by posing questions related to their adoption of available channels as well as their current "acquisition" habits. In this context, the term "buying" or "purchased" has been used to refer to music being legitimately purchased. Peer-to-peer (P2P) networks have been used when referring to content which has been downloaded illegally.

The analysis of gathered data (n = 197) revealed that the majority (97%) of polled South Africans have purchased at least one physical CD (Q9) (Figure 14). The median number of CDs owned (Q12) by these respondents fell within the "41 - 50" range (Mdn = 6, SD = 2.12). Both the median number of digital albums owned (Q17) by respondents and their reported number of digital albums downloaded by means of P2P network services (Q22) was revealed to fall in the "1 - 10" (Mdn = 2) range (SD = 2.19 for digital albums, SD = 2.35 for P2P). More than two thirds (69%) of survey respondents admitted to having used P2P network services (Q19) to download music, while 55% had bought at least one digital music album (Q14). Figure 15 presents a comparison of the number of discreet items reported as owned (or downloaded) via these three distribution channels. With regard to the number of

items owned per channel – respondents acknowledged owning larger numbers of physical media (CD) than virtual media (P2P, Digital). This is possibly due to CDs having been available for a number of decades prior to the advent of digital albums. Of interest was the similarity in the numbers of digital albums reported as being owned (P2P and purchased digital albums).

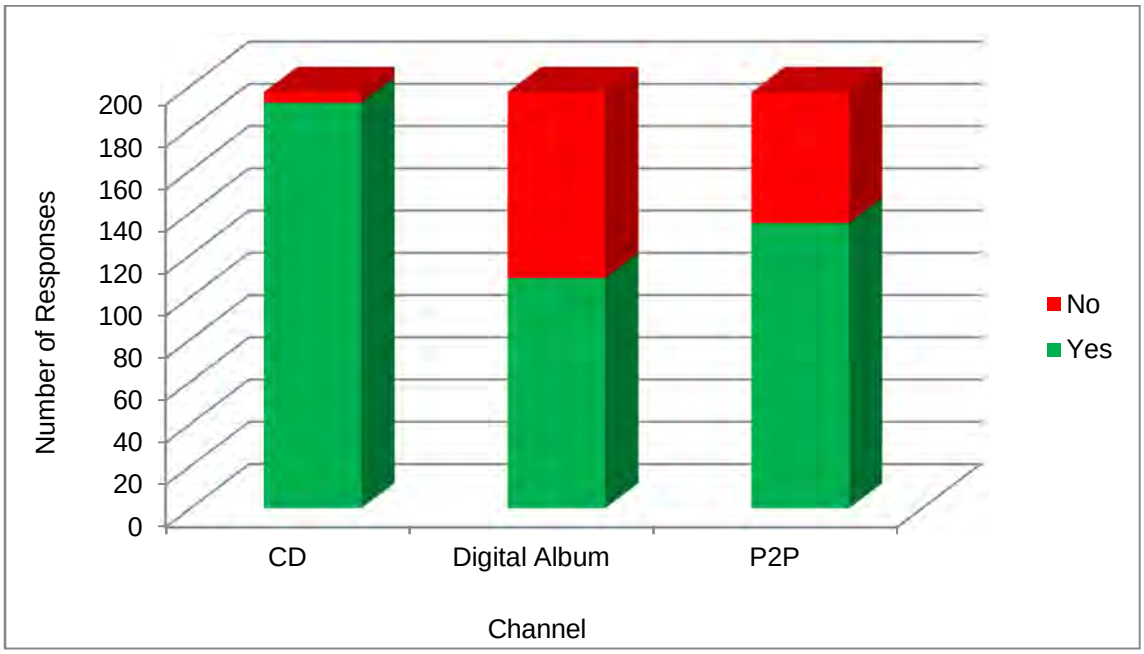

Figure 14: Music Acquisition Channels Used by Respondents

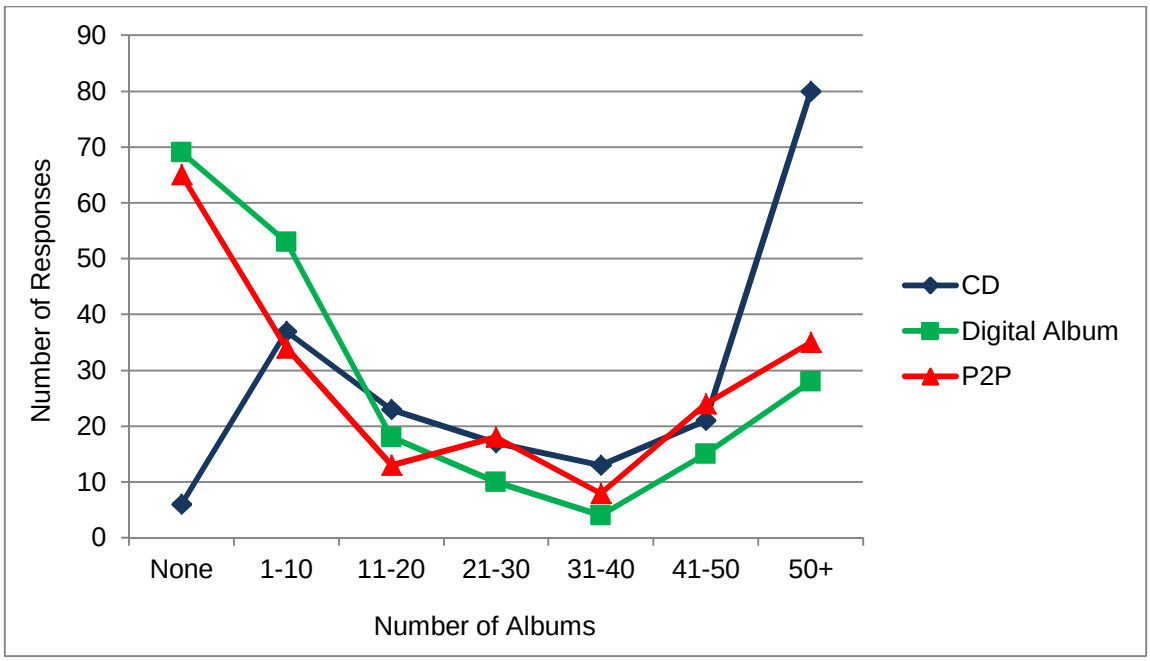

Figure 15: Number of Albums Owned per Channel

Current music acquisition trends amongst respondents were investigated by means of questions, which had them provide data related to their use of three channels (CD, Digital Album and P2P). Data revealed that a large number of respondents last made use of any of these channels more than a year prior (Q10 - “CD”, Q15 - “Digital Album”, Q20 - “P2P”), as is evident in Figure 16. This result is consistent with data presented in Figure 17, which shows the number of albums acquired by respondents, by means of these channels, over the course of a year (Q11 - “CD”, Q16 - “Digital Album” and Q21 - “P2P”). Data collected by this research revealed that few respondents purchase more than five albums per year and that these purchases are infrequent.

When questioned on their preferred digital music format (Q24), the MP3 file format came out on top (*n* = 194). A summary of these results is available in Figure 18.

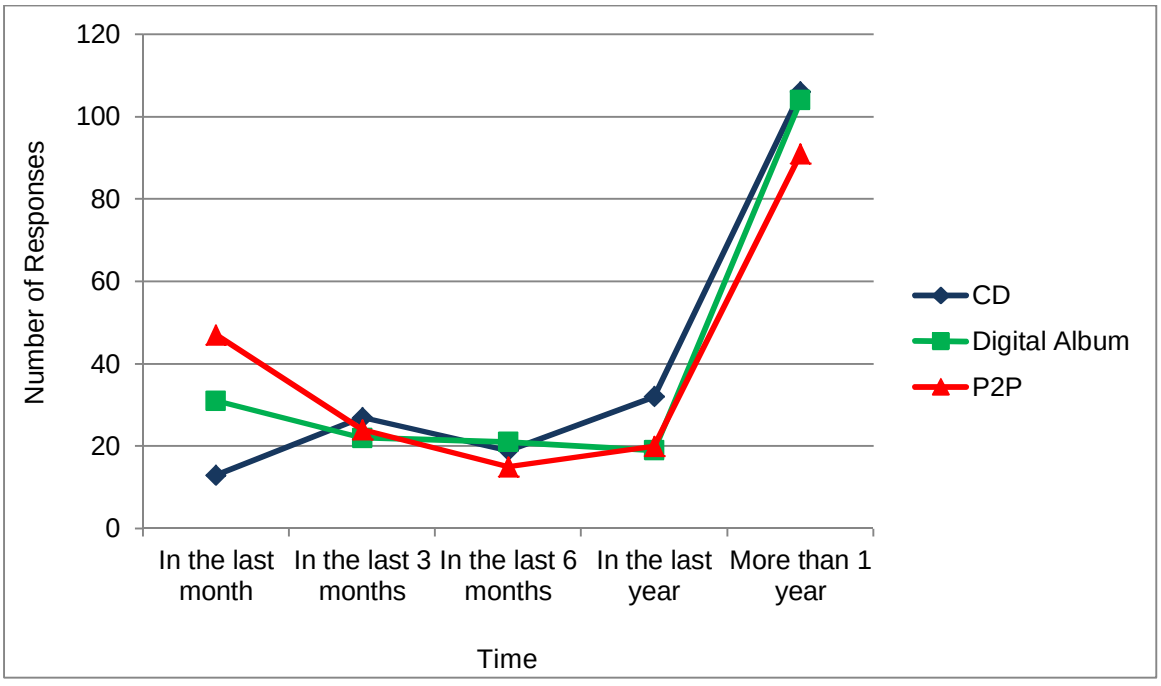

Figure 16: Period Since Most Recent Music "Purchase" per Channel

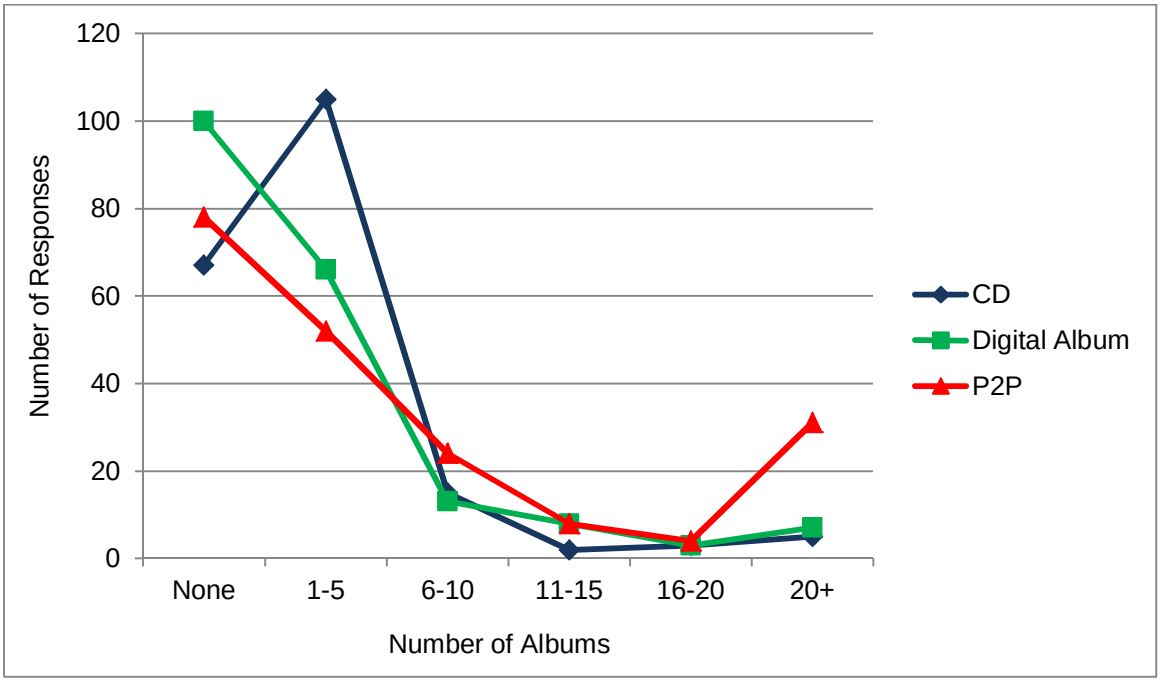

Figure 17: Typical Number of Units "Purchased" per Year per Channel

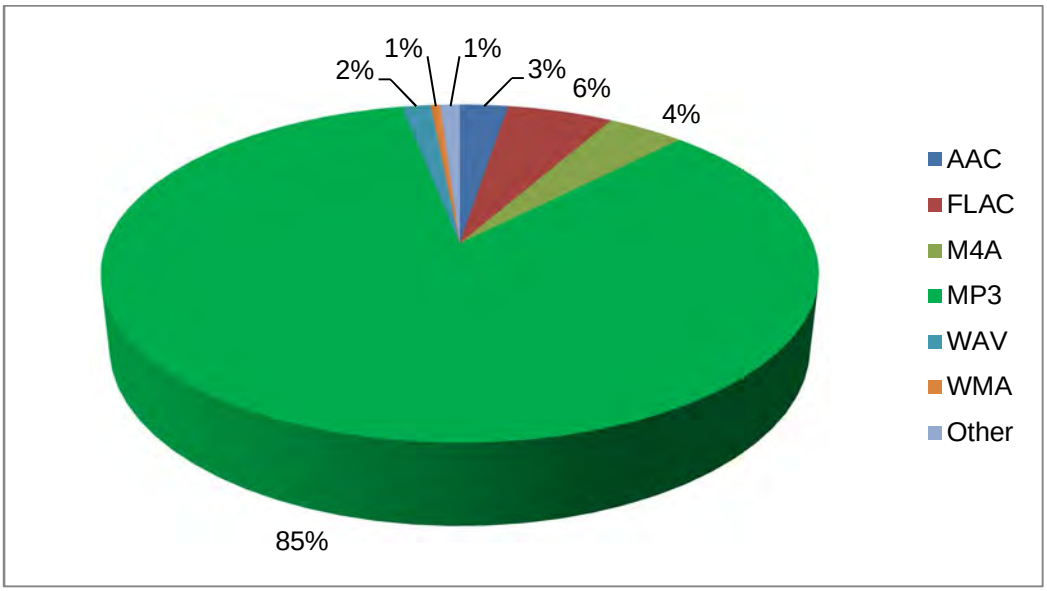

Figure 18: Preferred Digital Media Format

4.4 Digital Music Services

The four digital media services surveyed represent channels currently available to South Africans for acquiring digital music. Legitimate (paid) download services have been represented by "iTunes" while "The Pirate Bay" website has been employed as a source of illegal, or "pirate", downloads. Streaming services are represented by "Deezer" (audio albums) and "YouTube" (audio and video).

It should be noted that a single party omitted all responses related to the "Deezer" service. A sample size (*n*) of 196 has been used for "Deezer" calculations, while the remaining services make use of 197 as their sample size.

Most respondents (93%) believed that "YouTube" (Q26_4) is available to South Africans, followed by the "iTunes" (Q26_1) service (85%). Ranked third was "The Pirate Bay" (Q26_3, 61%) with "Deezer" (Q26_2) in last place (6%). A summary of this data is presented in Figure 19. An identical ranking was revealed when evaluating data related to the usage of these services (Q27) as evident in Figure 20. A further question measuring when last respondents had made use of these services (Q28) revealed that 68% of these respondents had used "YouTube" in the last month. In the case of both "The Pirate Bay" and "Deezer", the most frequent response was that of having "Never" used the service. The three parties identified as having used "Deezer" had all accessed the service in the month prior. A comparison between services and its most recent access reported by respondents has been provided in Figure 21.

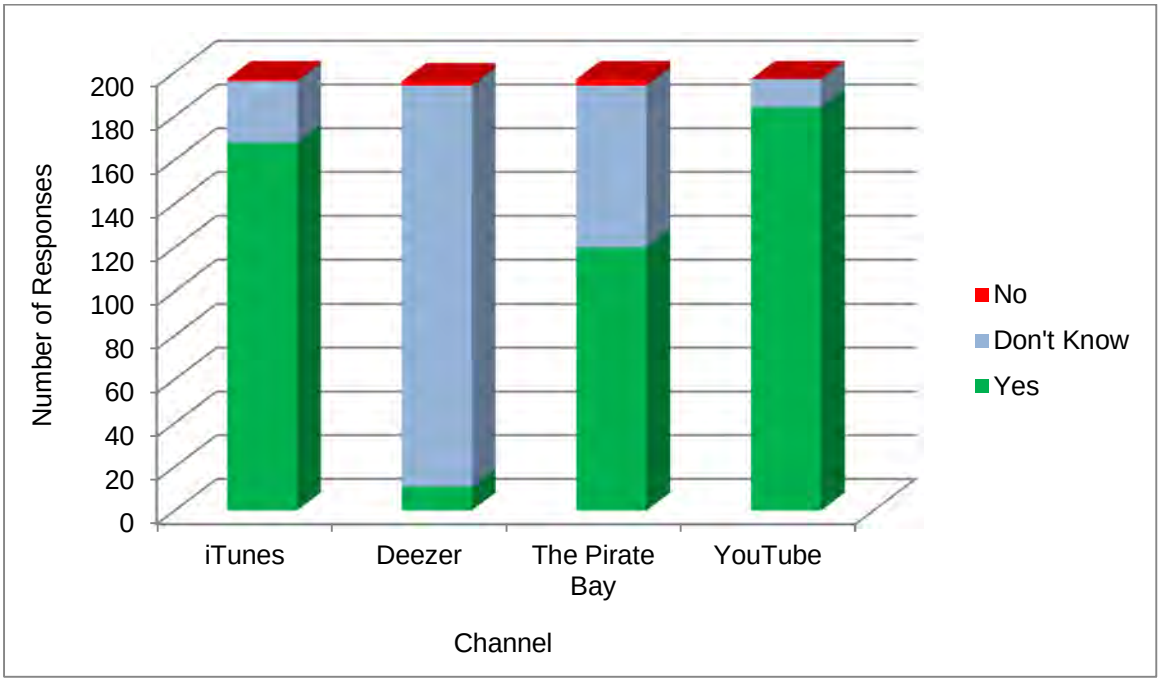

Figure 19: Awareness of Services Available to South Africans

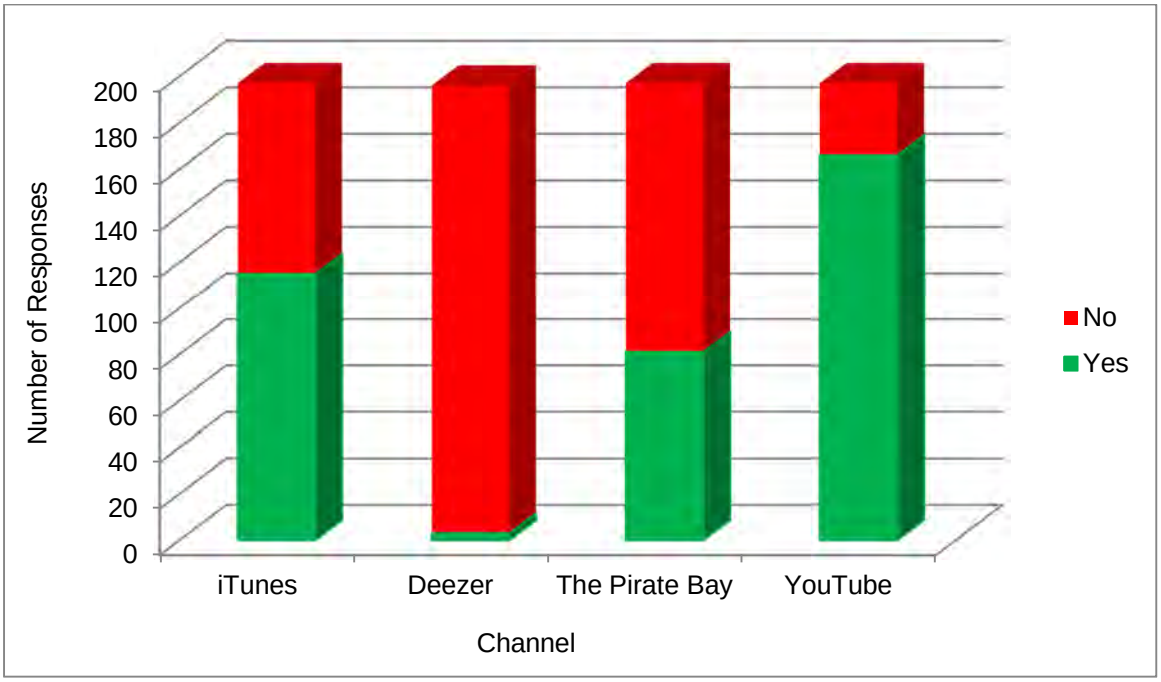

Figure 20: Services Used by South Africans

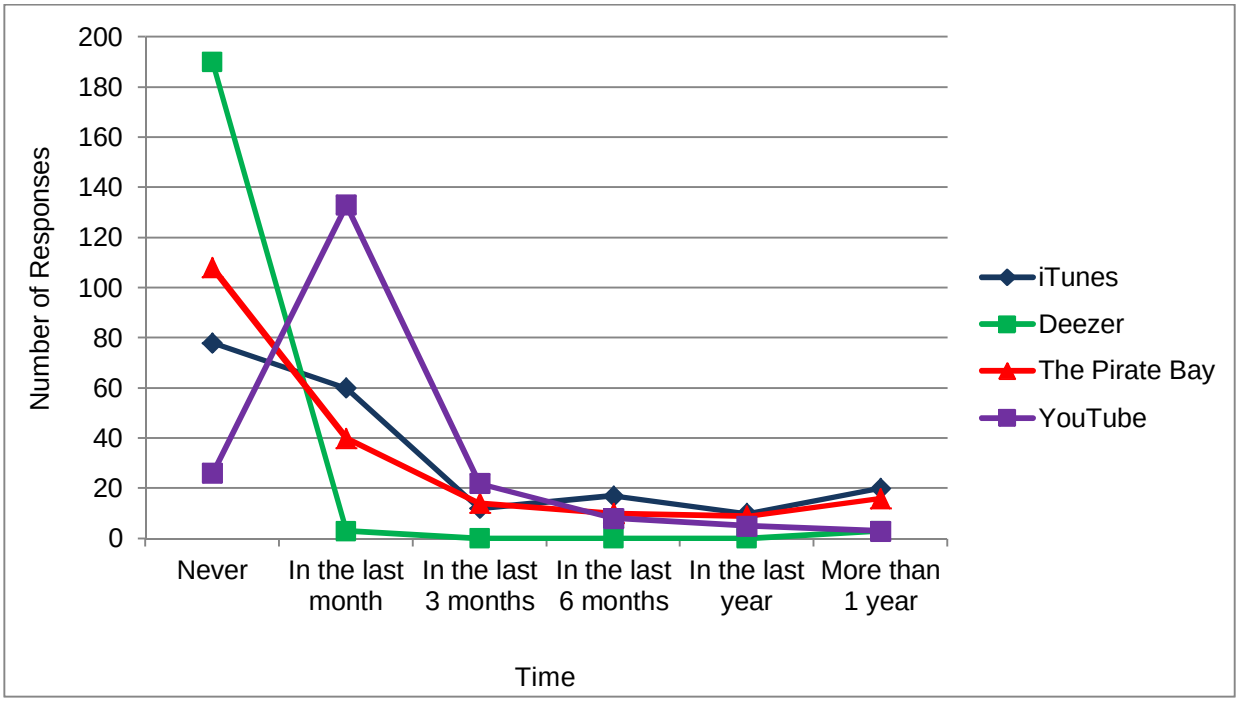

Figure 21: Period Since Last Use of Service

Respondents were polled for their opinions regarding the availability of content when making use of the search functionality (Q32, “Availability”) offered by the four services and its convenience of use (Q30, “Convenience”). For both of these topics, “YouTube” emerged as the leader, with 39% of respondents “strongly agreeing” with the statement, “I believe that YouTube provides users with a convenient service”. Similarly, 43% of the 197 respondents selected “Strongly Agree” when presented with the statement, “I am usually able to find the music that I am looking for when using YouTube”. Few respondents registered any form of disagreement with either of these statements (8 for “Convenience”, 5 for “Availability”). The download channels (“iTunes”, “The Pirate Bay”) elicited a positive response from respondents in both categories. In terms of “Availability”, the legitimate channel (“iTunes”) achieved a 48% combined “Agreement” rating (“Somewhat Agree”, “Agree” or “Strongly Agree”), which was found to be higher than that of the illegitimate channel (“The Pirate Bay”, 36%). A similar result was found for “Convenience”; “iTunes” 58% and “The Pirate Bay”, 44%. In the case of both download services, the most frequently recorded response for both measures (“Convenience”, “Availability”) was that of ”Neutral”. The “Deezer” service was awarded the highest number of “Neutral”

responses in both “Convenience” (181) and “Availability” (181) categories (*n* = 196), further demonstrating a lack of awareness amongst South Africans of this service. Comparative data collected from these survey elements have been provided in Figure 22 (“Channel Offers a Convenient Service”) and Figure 23 (“Channel Offers Desired Content”).

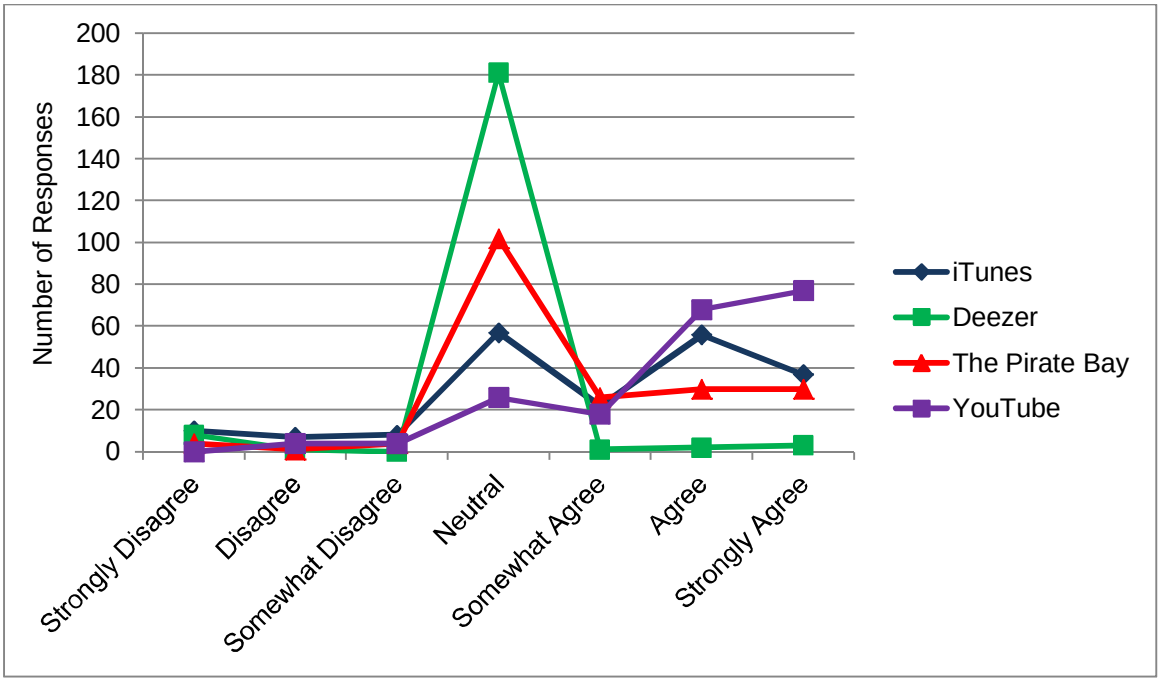

Figure 22: Channel Offers a Convenient Service

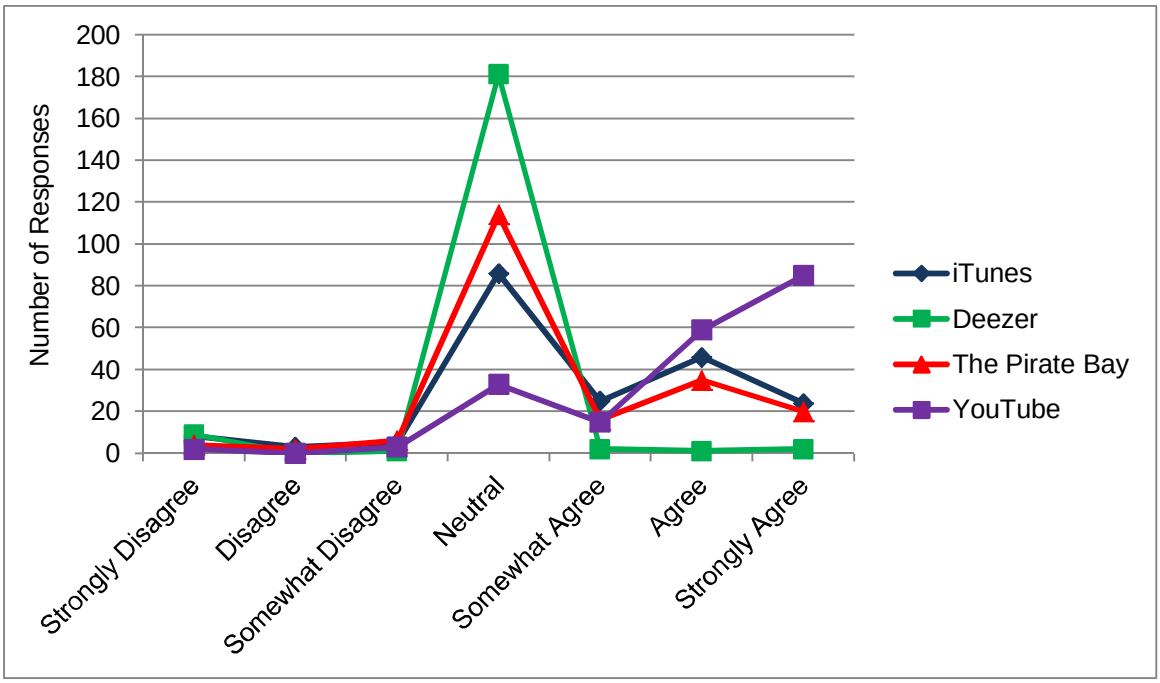

Figure 23: Channel Offers Desired Content

The “YouTube” service was cited as being very easy to use and having good search functionality by five of the six interview subjects (DMC1, DMC2, DMC4, M1 and M2). These respondents suggest that they are usually able to locate the music that they seek when making use of the service. The opposite was reported of “iTunes” by DMC1, DMC2 and M1, who suggest that the service only offers “popular” music and “locks” users into using the software. They assert that once media has been purchased, it cannot easily be migrated from “iTunes”.

DMC2 predicts that streaming services, such as “YouTube”, will become more popular than download services in the future as bandwidth speeds improve in South Africa – negating the necessity to physically download media for consumption.

A significant number of “neutral” responses were recorded for questions on “Availability” and “Convenience” (Figure 22, 23). This may be the result of the questionnaire having not offered a “Not Applicable” option for those respondents who may not have used these services.

The data revealed that many people believe that the price of music is too high (Figure 24). Twelve percent of respondents (*n* = 197) indicated that they disagreed with a statement stating that the price of a physical CD is currently too high (Q33_1), which was found to be fewer than those who believe the same of digital albums (Q33_2). More than half (51%) of respondents believe that digital albums are overpriced (Q33_3), a finding consistent with those who believe that the price of a digital album is too high (52%). A single survey question was used to measure respondents’ opinions regarding the contrast between physical and digital album pricing (Q33_4). This revealed that 49% of respondents believe that digital albums are well priced when compared to the price of a physical CD. A further 22% indicated some level of disagreement with this statement. More than two thirds of respondents (70%) believe that they could save money by obtaining “pirated” music from the internet (Q33_5). One interview subject, M1, suggested that pricing models should be reviewed for digital music as manufacturing costs are not applicable when distributing digital media.

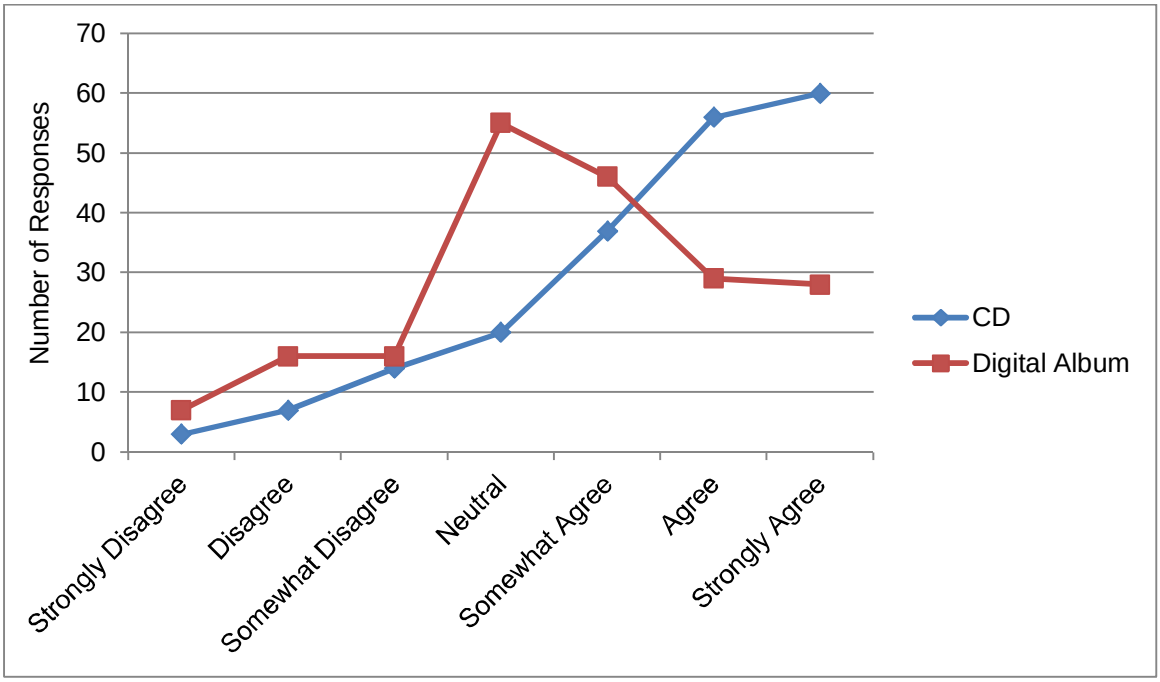

Figure 24: The Price of Music is Too High

Respondents (*n* = 197) indicated that they believe that it is more convenient to download "pirated" music from the internet than to either buy a physical CD from a brick-and-mortar store (Q34_1) or from a digital download service such as "iTunes" (Q34_2). This contrast is displayed in Figure 25, which shows a 78% (physical CD) and 49% ("iTunes") agreement rating for the convenience of piracy over supporting available legitimate channels.

The survey instrument contained a number of questions which sought to measure respondents' behaviour by posing statements to which respondents had to indicate their level of agreement (Figure 26). Seventy-one percent of respondents (*n* = 197) indicated that they would download an illegal copy of an album should it not be available from a physical store (Q34_3), which is consistent with the result yielded by a similar scenario in which a digital store (70%, Q34_4) was named. The data revealed that 44% of respondents would not check for a legitimate source of a digital album prior to obtaining a "pirate" copy (Q34_5). Furthermore, 57% of all responses indicated that they would repeat the act of downloading music from an illegitimate source, should there be no negative consequence for their actions (Q36_4). A summary of these findings has been provided in Figure 27.

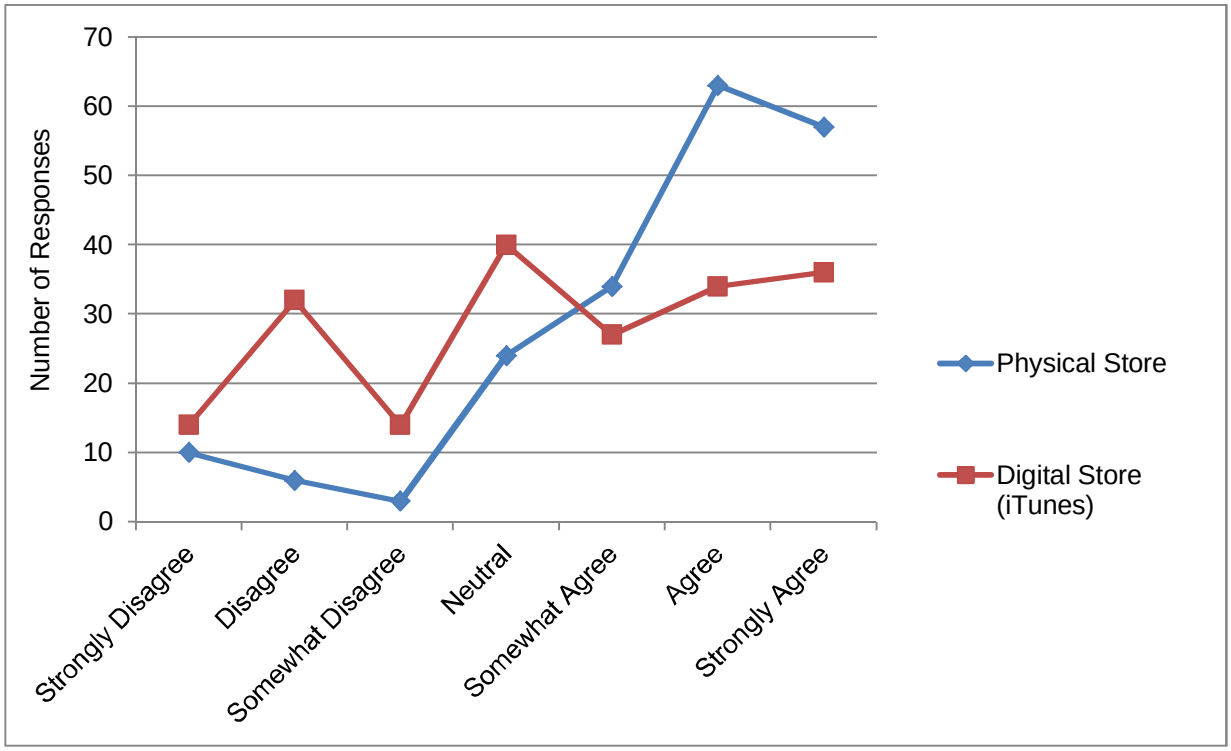

Figure 25: Piracy is More Convenient than Making Use of Legitimate Channels

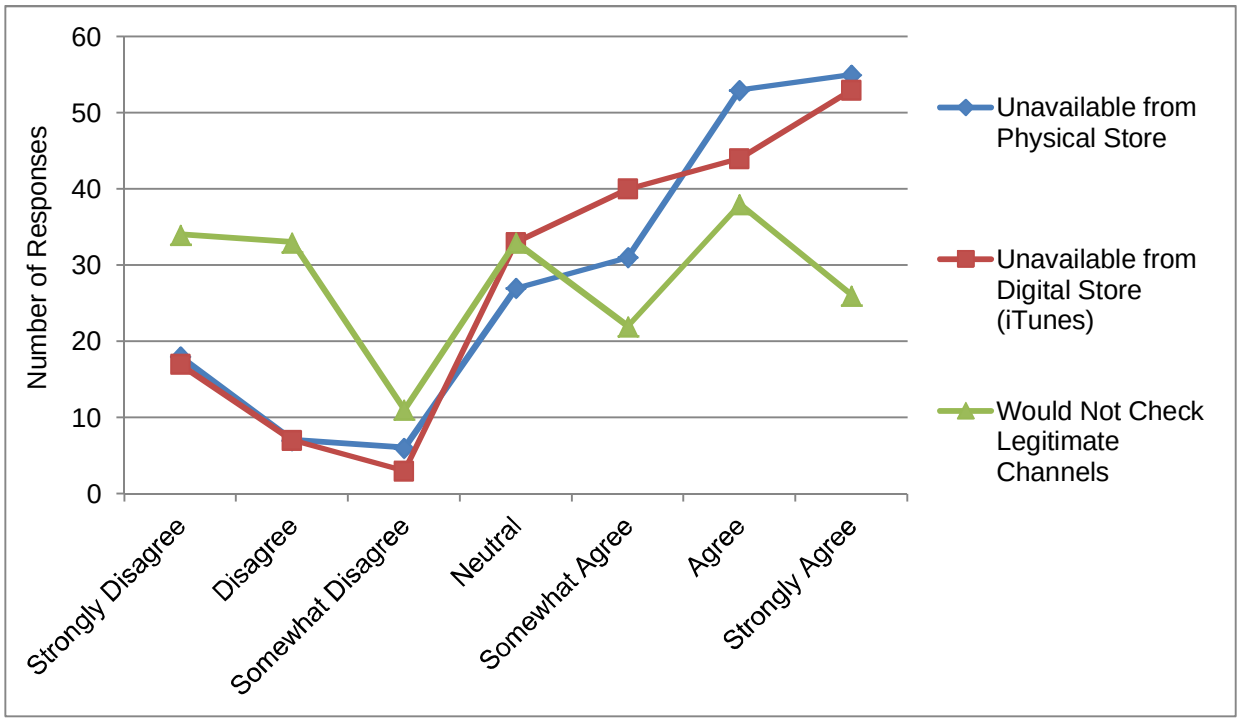

Figure 26: Respondents Would Download “Pirated” Music...

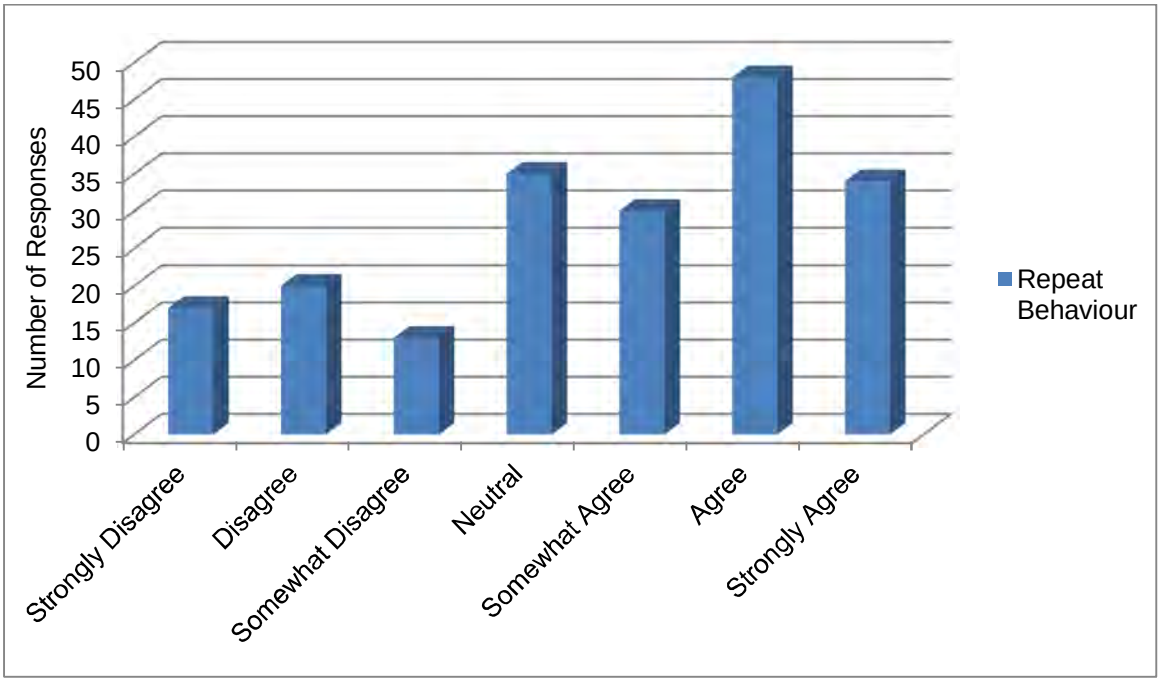

Figure 27: Respondent Willingness to Repeat Behaviour Should No Negative Consequences be Experienced

The analysis of data related to respondents' reported ability to locate and download pirated music yielded consistent results for the responses to all three questions, as presented in Figure 28. This revealed that 81% of respondents (*n* = 197) believe that they possess the necessary skills to locate (Q35_1) and download (Q35_2) pirated media, while 85% of the 197 subjects indicated that they have the resources to do so (Q35_3).

Fifty-six percent of respondents (*n* = 197) were of the opinion that South Africa has legislation criminalising the practice of downloading digital media (Q36_3, Figure 29). A number of parties acknowledged that they were at risk of being caught and prosecuted for downloading pirated music from the internet (Q36_1). The accompanying Figure 30 shows a breakdown of responses where 61% of respondents indicated some level of agreement with this statement (Risk of being caught and prosecuted). The data further showed that the risk of prosecution outweighed the value gained from pirated media (Q36_2) as is evident in Figure 31.

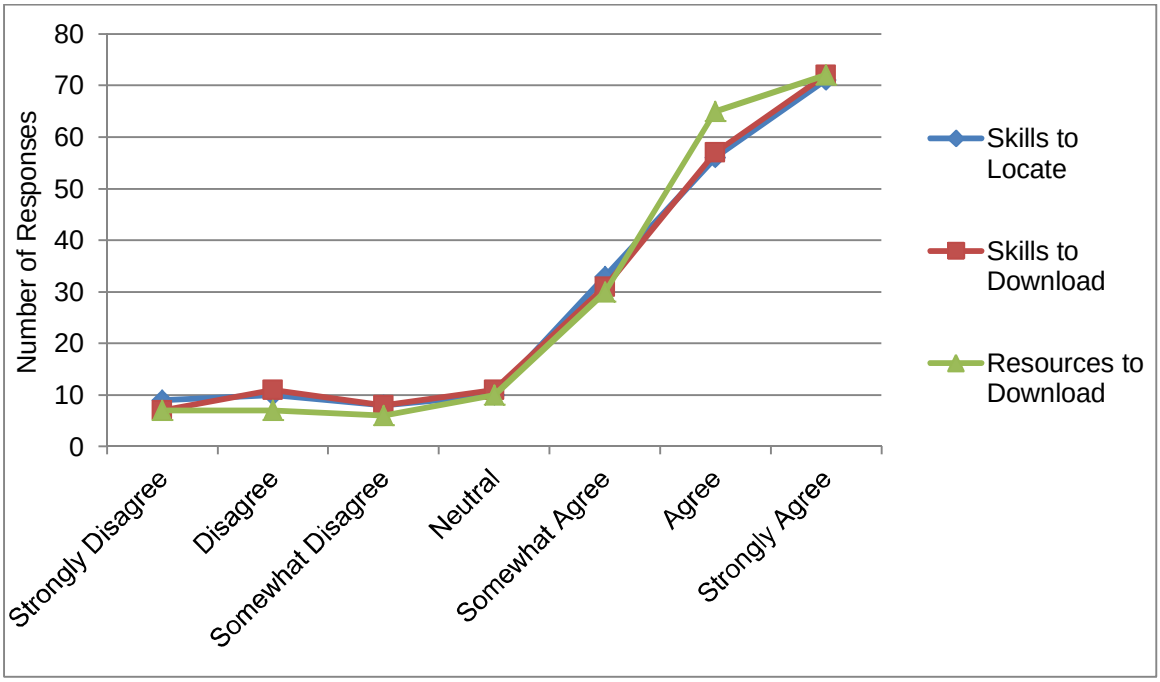

Figure 28: Respondents Having Necessary Skills to Practise Digital Music Piracy

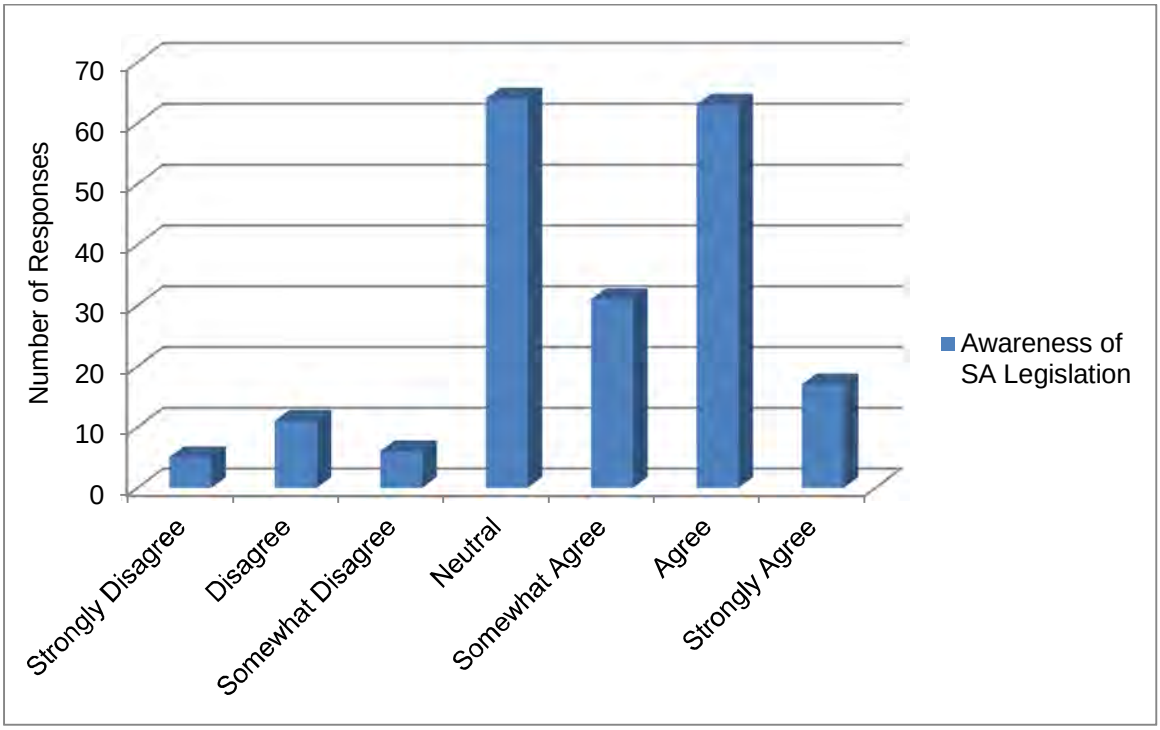

Figure 29: Does South Africa Has Applicable Piracy-Related Legislation?

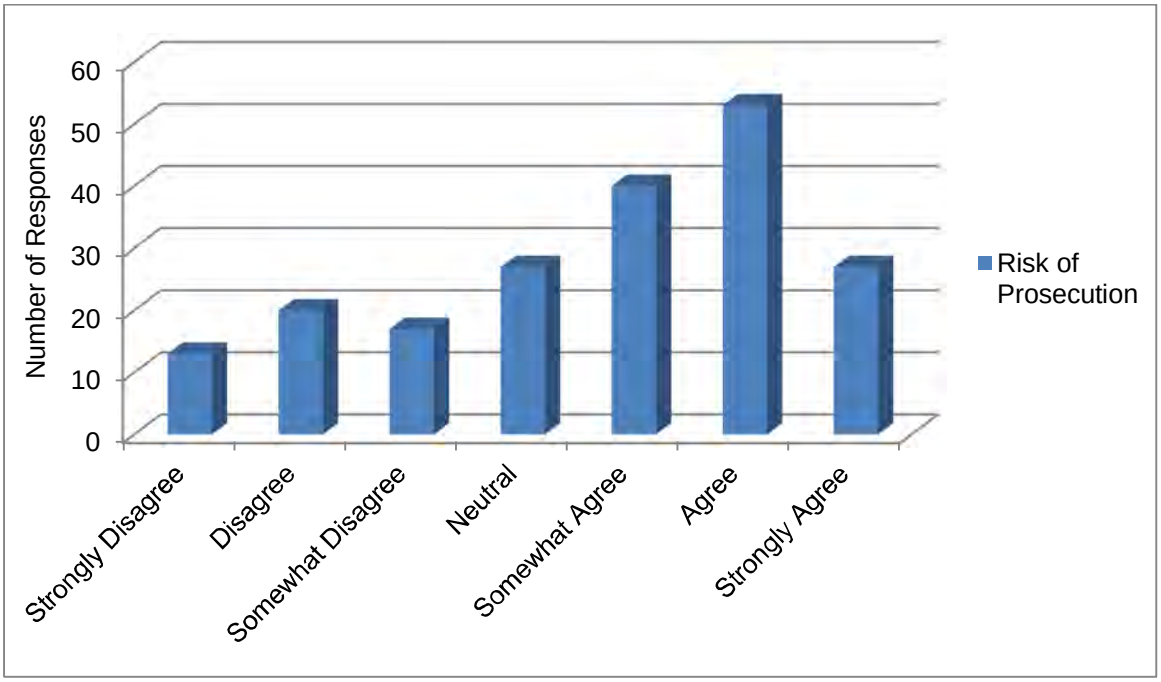

Figure 30: Assessment of the Risk of Being Caught and Prosecuted

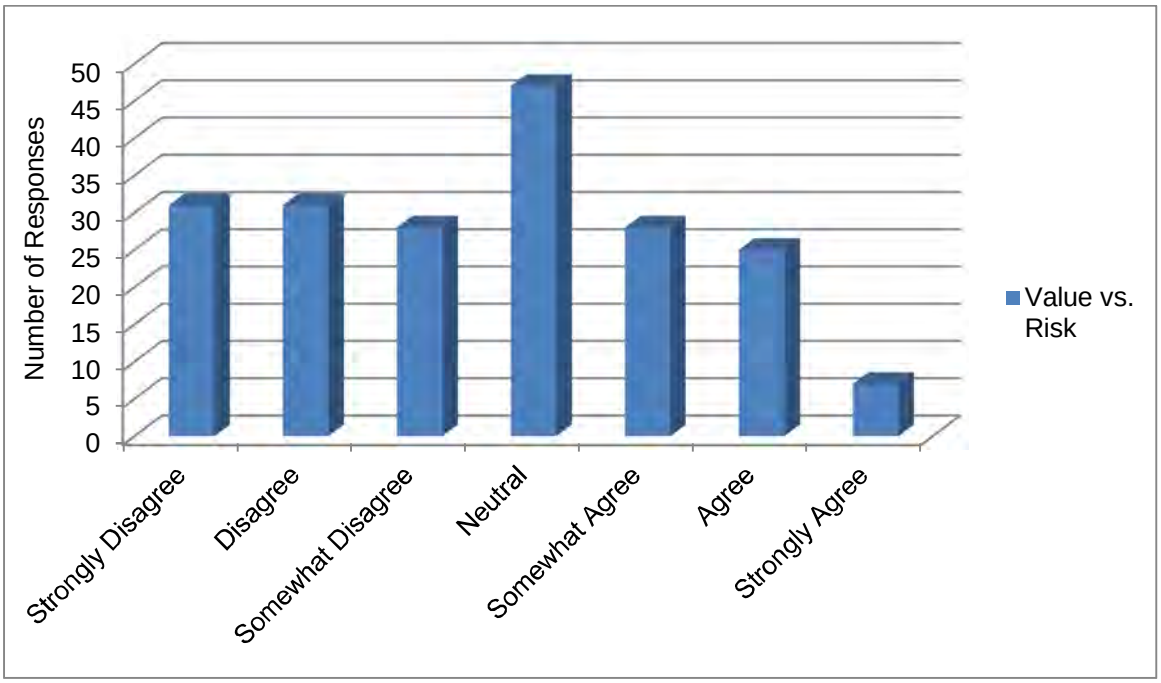

Figure 31: Value Gained from Piracy is Worth the Risk of Prosecution

The final set of questions attempted to measure respondents' attitude towards digital music piracy. Analysis of data gathered from 197 respondents revealed that 59% of all respondents believe that downloading "pirated" music from the internet is wrong (Q37_3, Figure 32) and more than half (51%) of all respondents agreed that further sharing of pirated content is wrong (Q37_2). Despite these values, only 34% of the total number of responses collected indicated an unwillingness (Q37_5) to share any illegally downloaded media with others (friends, colleagues and family). Fewer than half (48%) of all respondents indicated that they would suffer feelings of guilt (Q37_6) should they download illegal music from the internet (Figure 33).

From the perspective of legally purchased digital media, 74% of all respondents indicated a willingness (Q37_4) to share their legitimate content with their friends, colleagues and family. Less than a quarter (24%) of the total data collected suggested that this practice is "wrong" (Q37_1) and 12% of respondents selected the "Neutral" option for this question. Figure 34 presents a comparison between reported attitude related to legal and illegal music sharing while Figure 35 contrasts respondents' "willingness" to share both legitimate and illegitimate media with others.

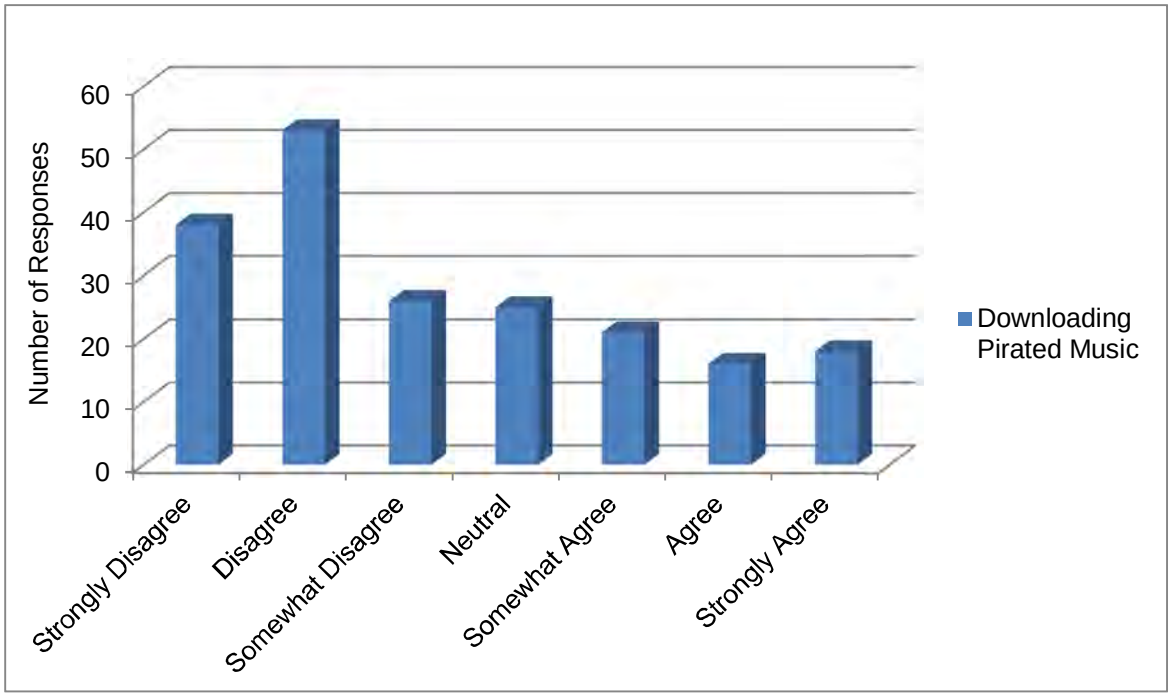

Figure 32: Nothing Wrong with Downloading "Pirated" Music

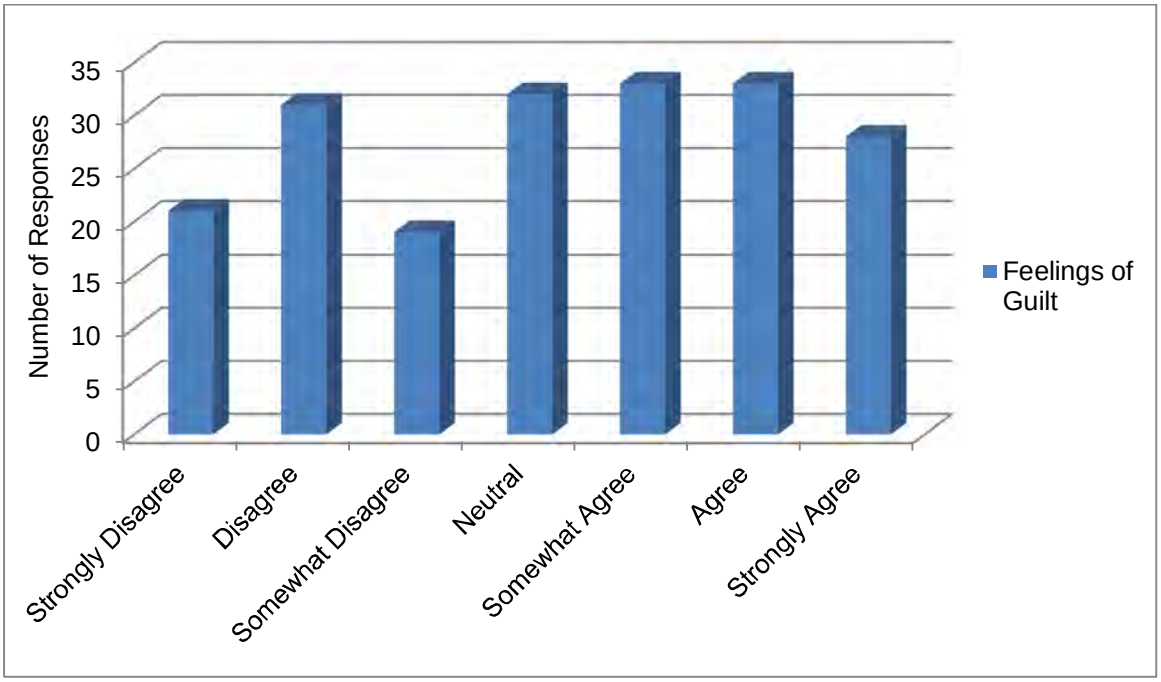

Figure 33: Guilt Associated with Downloading "Pirated" Music

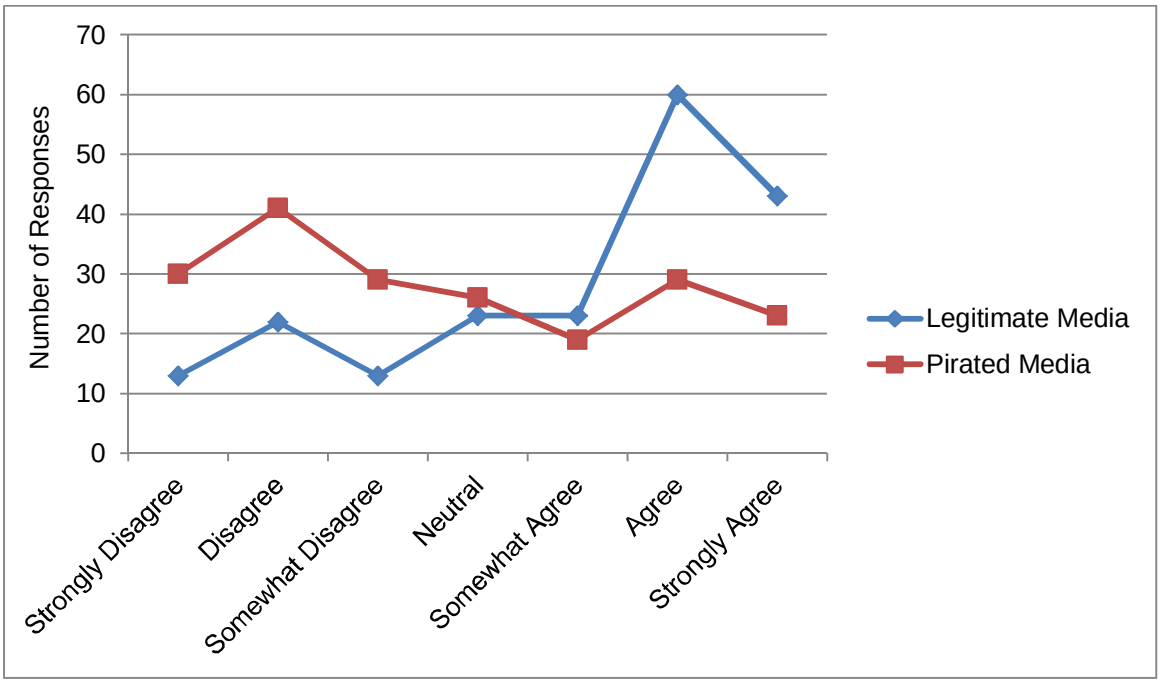

Figure 34: Nothing Wrong with Sharing...

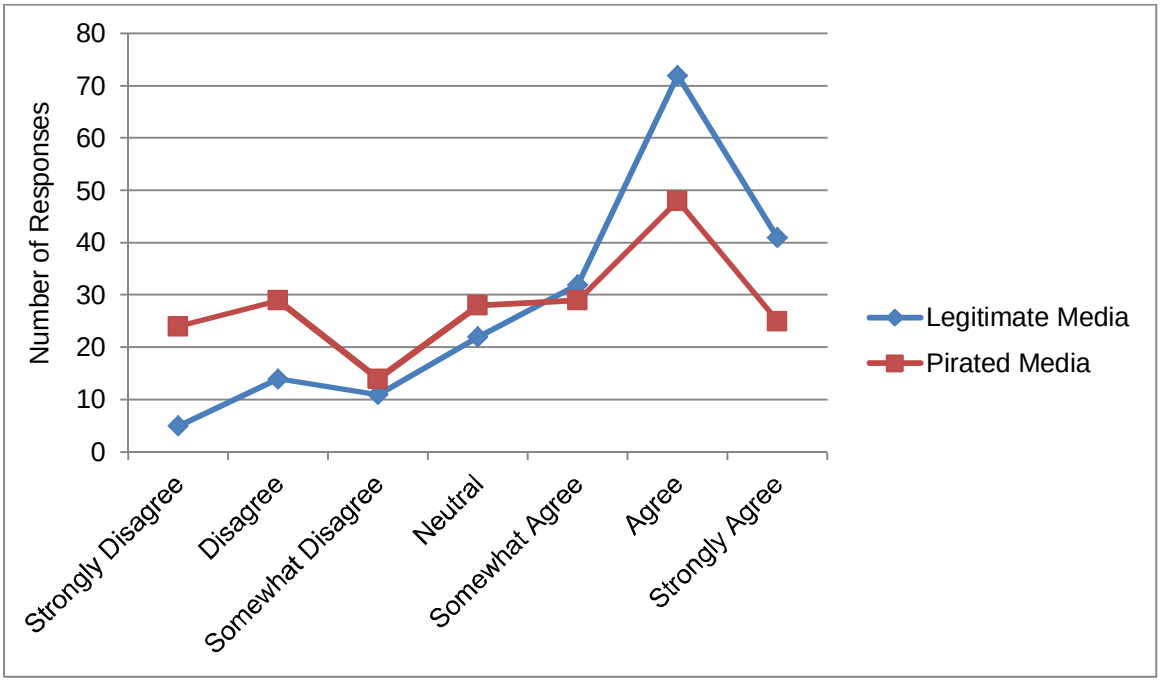

Figure 35: I Would Share...

4.5 Conceptual Model Constructs

This research made use of a conceptual model (Figure 7), introduced in Section 2, to test a number of hypotheses. The conceptual model is comprised of a number of constructs derived from literature. These constructs are mapped to various questions contained within the survey instrument.

Supplemental supporting evidence, such as the results of internal reliability tests, is provided in Appendix F (*"Conceptual Model Constructs: Internal Validity Calculations"*). Appendix E contains a full breakdown of all available descriptive statistics as well as any related histograms representing the underlying raw data.

4.5.1 Awareness of Digital Music Services ("Awareness")

The construct of "Awareness" is comprised of four separate questions, each relating to a specific source of digital music; "iTunes" (Q26_1), "Deezer" (Q26_2), "The Pirate Bay" (Q26_3) and "YouTube" (Q26_4). This allows these services to be ranked in terms of respondents' relative awareness of each of these.

4.5.2 Attitude Towards Digital Music Piracy ("Attitude")

Respondents' attitude towards digital music piracy, referred to as the "Attitude" construct, consists of two questions; Q37_2 and Q37_3. Internal consistency amongst these elements was tested by calculating Cronbach's alpha value. The coefficient value for "Awareness" was .91 (standardised alpha value of .91) indicating a high level of internal consistency amongst these questions.

4.5.3 Digital Music Piracy Behaviour ("Behaviour")

The digital music piracy behaviour ("Behaviour") construct is comprised of the questions labelled Q34_3, Q34_4, Q34_5 and Q37_5. A value of .86 was calculated for Cronbach's alpha correlation coefficient (standardised alpha value of .87). These four questions were deemed suitable to represent this construct.

4.5.4 Technical Ability

Respondents' self-assessed "Technical Ability" is measured by three questions (Q35_1, Q35_2, and Q35_3). Internal validity tests revealed a Cronbach's alpha value of .96 (standardised alpha value of .96), validating their grouping.

4.5.5 Convenience

Questions Q34_1 and Q34_2 are used to measure the construct of "Convenience". This grouping yielded a Cronbach's alpha value of .74 (standardised alpha value of .75) suggesting that the questions exhibited a good level of internal consistency.

4.5.6 Availability

The "Availability" of content being searched for by respondents is measured by four questions, Q32_1, Q32_2, Q32_3 and Q32_4. Each of these questions was linked to one of the services being researched, allowing for correlations to be tested at an individual service level.

4.5.7 Price

Two questions, Q33_2 and Q33_3, are used to represent the "Price" model construct. Internal validity tests resulted in a Cronbach's alpha value of .95 (standardised alpha value of .95).

4.5.8 Gender

The first of the single-question based constructs, “Gender”, derives its data from the survey element Q2.

4.5.9 Age

The construct labelled “Age” is represented by Q1 found within the survey instrument.

4.5.10 Education

A single question (Q3) is used to represent the construct “Education”.

4.5.11 Risk

Research participants’ appetite for “Risk” is captured by the instrument item Q36_1.

4.5.12 Subjective Norms

The question Q37_5 is used to gauge respondents’ willingness to perpetuate digital music piracy, affecting a change in societal norms.

4.5.13 Habit

Finally, respondents’ “Habit” forming behaviour is measured by Q36_4.

5 Interpretation of Findings

5.1 H_1 : Digital music consumers who have a positive attitude towards digital music piracy are likely to practise (digital music) piracy

The Spearman's rank order correlation coefficient value was calculated in order to test the relationship between the constructs of "Attitude" and "Behaviour". This resulted in a positive correlation between these two constructs being observed (n = 197, $p < .05$). The results of this calculation have been provided in Table 6 and Figure 36, which shows a scatterplot of these findings. This suggests support for this hypothesis, as a positive correlation between "Attitude" and "Behaviour" was observed.

Pair of Variables	Marked correlations are significant at $p < .05$			
	Valid *N*	Spearman *R*	*t*(*N*-2)	*p*-value
Attitude (Q37_2) & Behaviour (Q34_3)	197	0.51	8.34	0.00
Attitude (Q37_2) & Behaviour (Q34_4)	197	0.42	6.52	0.00
Attitude (Q37_2) & Behaviour (Q34_5)	197	0.53	8.79	0.00
Attitude (Q37_2) & Behaviour (Q37_5)	197	0.78	17.63	0.00
Attitude (Q37_3) & Behaviour (Q34_3)	197	0.51	8.21	0.00
Attitude (Q37_3) & Behaviour (Q34_4)	197	0.44	6.88	0.00
Attitude (Q37_3) & Behaviour (Q34_5)	197	0.55	9.09	0.00
Attitude (Q37_3) & Behaviour (Q37_5)	197	0.67	12.72	0.00

Table 6: Spearman's Rank Order Correlations: "Attitude" / "Behaviour"

Literature posits that an individual's attitude is influenced by possible consequences of his/her actions (Cronan & Al-Rafee, 2007). This was observed in the data as it revealed that respondents do not fear punishment for downloading and sharing pirated music, indicating a positive attitude towards this practice. The data revealed that more than half of the survey respondents considered the practice of digital media piracy to be "wrong", however they would continue to download and share illicitly sourced music with their peers.

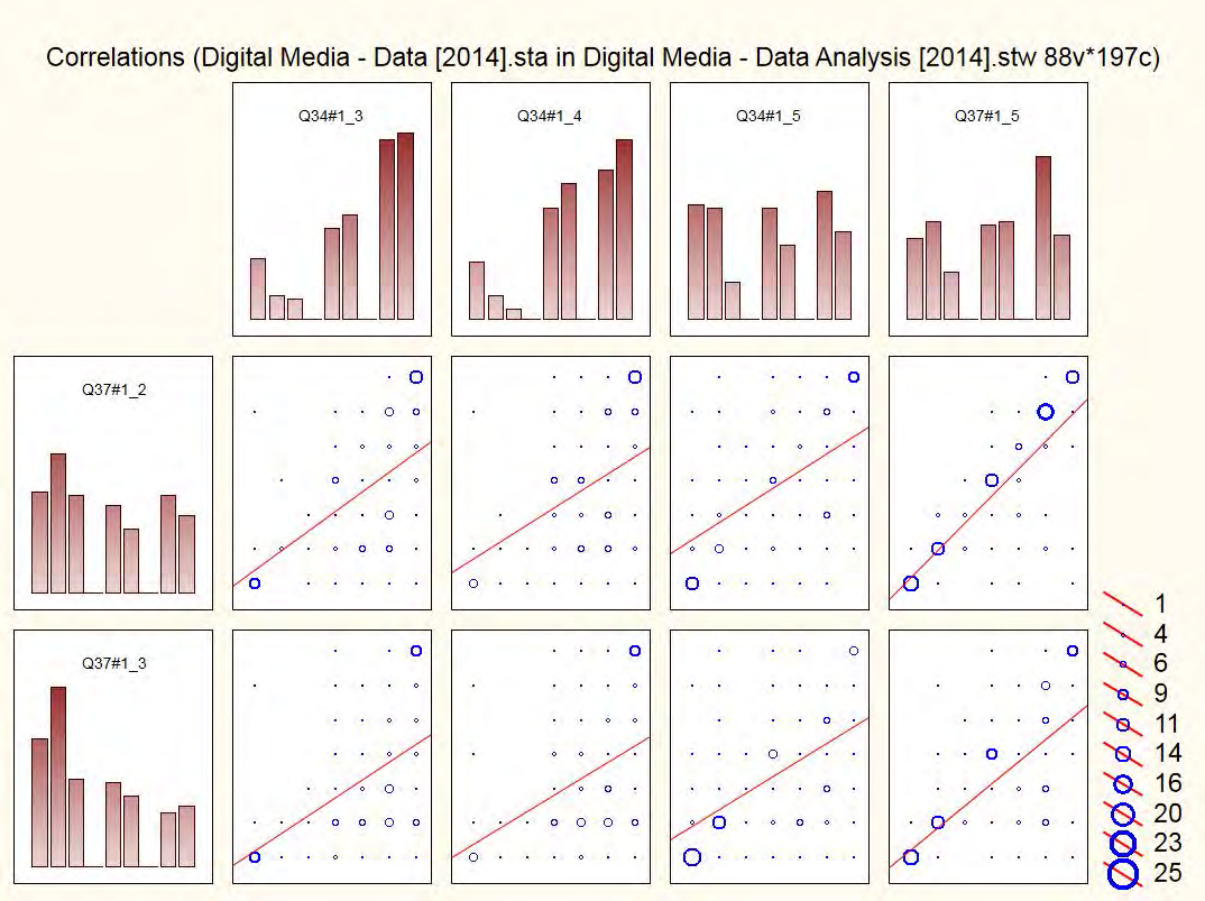

Figure 36: “Attitude” / “Behaviour”

Three of the interview subjects (DMC1, DMC4 and M1) admitted to having made use of P2P networks in order to obtain music. Common sources cited for obtaining pirate music include websites such as “ThePirateBay.org”, “torrentz.eu” and “isoHunt.to” as well as internal company network servers.

One of the musicians interviewed, M2, admitted to having received pirated music from friends, however, had not personally made use of P2P networks. A generally positive attitude towards digital music piracy was observed amongst interview subjects, with all six indicating their willingness to redistribute any pirated music in their possession.

5.2 H_2: Digital music consumers have a greater awareness of illegitimate channels and services for acquiring digital music than the available legitimate services

Descriptive statistics for the level of "Awareness" of each of the four services being investigated were calculated (Table 7). This resulted in this hypothesis being deemed unsupported based upon observed data. The legitimate service, "YouTube", was revealed to have the highest level of "Awareness" amongst respondents (*n* = 197), followed by "iTunes" (*n* = 197). The illegitimate service "The Pirate Bay" was ranked third (*n* = 197), followed by "Deezer" (*n* = 196). Figure 37 has been provided to represent this ranking of observations.

	Valid *N*	Mean	Median	Mode	Frequency of Mode	Min	Max	Variance	Std. Dev
YouTube (Q26_4)	197	1.07	1.00	1.00	184	1.00	2.00	0.06	0.25
iTunes (Q26_1)	197	1.15	1.00	1.00	168	1.00	3.00	0.14	0.37
The Pirate Bay (Q26_3)	197	1.41	1.00	1.00	120	1.00	3.00	0.27	0.52
Deezer (Q26_2)	196	1.95	2.00	2.00	183	1.00	3.00	0.06	0.25

Table 7: Descriptive Statistics per Service

Data gathered by this research was compared to prior research conducted by the IFPI (International Federation of the Phonographic Industry, 2013a), referenced in Section 2.3.1, which measured awareness of a number of legitimate sources of digital music at an international level. This (South African) research yielded results consistent with those of the IFPI with regard to the relative awareness of the services surveyed. Both ranked "YouTube" in first position, "iTunes" next and "Deezer" in last place.

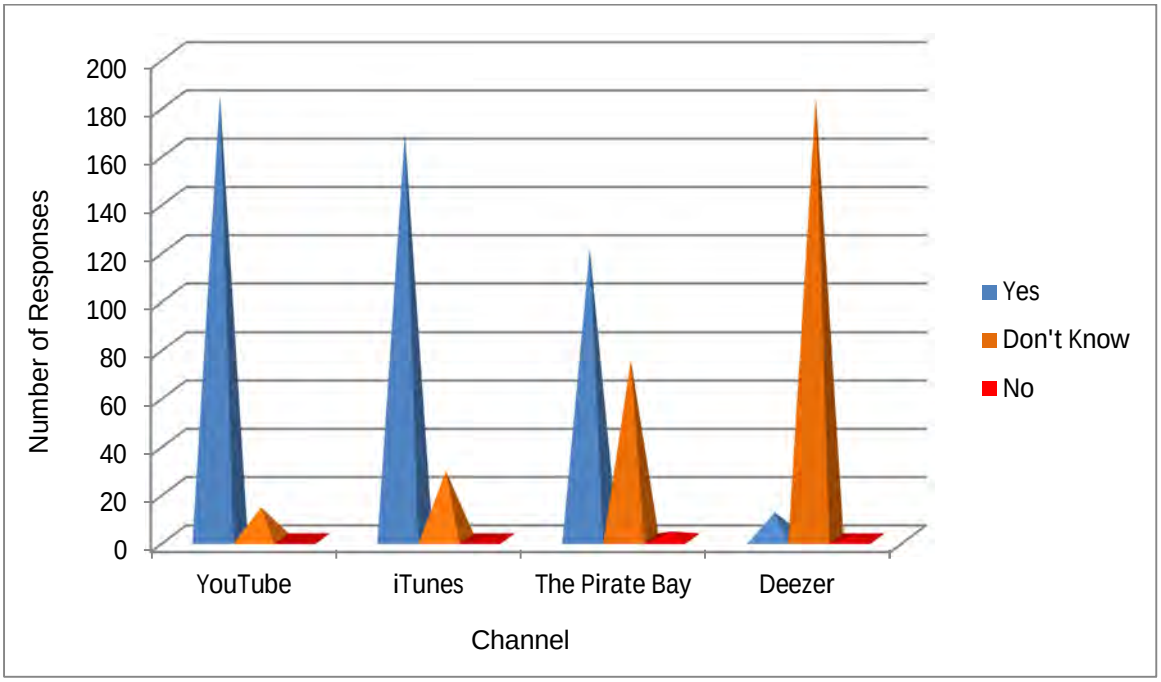

Figure 37: Relative Awareness of Services

The popularity of "YouTube" was emphasised by interview subjects as all but one (DMC3) reported that they made frequent use of the service. Both of the musicians (M1, M2) noted that it (YouTube) is an excellent resource for researching music and very useful to them as working musicians.

In terms of awareness of "The Pirate Bay", only 61% of survey respondents inferred that this illegitimate source of music was available to South Africans, while all of the interview subjects had "heard" of it. Prior research (Arnab & Hutchison, 2006) revealed that many parties obtained pirated music from sources other than the internet such as from people within their social circles. This corresponds with the data collected as well as with interview subjects' responses. All six of these admitted to having received pirated music from their peers and being willing to share it with others.

5.3 H_3: Digital music consumers have a positive attitude towards available illegitimate services

This hypothesis was tested by investigating the relationship between the "Attitude" construct and respondents' "Awareness" of *each* of the four digital music sources employed by this research ("iTunes", "Deezer", "YouTube" and "The Pirate Bay"). By evaluating Spearman's rank order correlation test results for each service, the researcher was able to gauge differences in correlations between respondents' "Awareness" of each of these services and their "Attitude" towards these.

A statistically significant negative correlation was found to exist between "Attitude" and the illegitimate source of digital media being researched, "The Pirate Bay" (n = 197, $p < .05$). This resulted in this hypothesis not being supported.

The results of the calculations related to "The Pirate Bay" have been presented in Table 8, and Figure 38 provides a scatterplot summarising these findings. The raw results arising from the calculations for each service, and its related scatterplot, have been provided in Appendix F for reference purposes.

Pair of Variables	Marked correlations are significant at $p < .05$			
	Valid *N*	Spearman *R*	*t*(*N*-2)	*p*-value
Attitude (Q37_2) & The Pirate Bay (Q26_3)	197	-0.21	-3.00	0.00
Attitude (Q37_3) & The Pirate Bay (Q26_3)	197	-0.22	-3.17	0.00

Table 8: Spearman's Rank Order Correlations: "Attitude" / "Awareness" of "The Pirate Bay"

Previous research (Cooke, 2006) cites "The Pirate Bay" as one of the most popular websites containing links to illicit music. All of the interview subjects were familiar with this site; however, only two of these (DMC1, DMC4) had made use of it. One of these (DMC4) stated, while referring to this service, that:

> *"Everything is free – why pay?"*

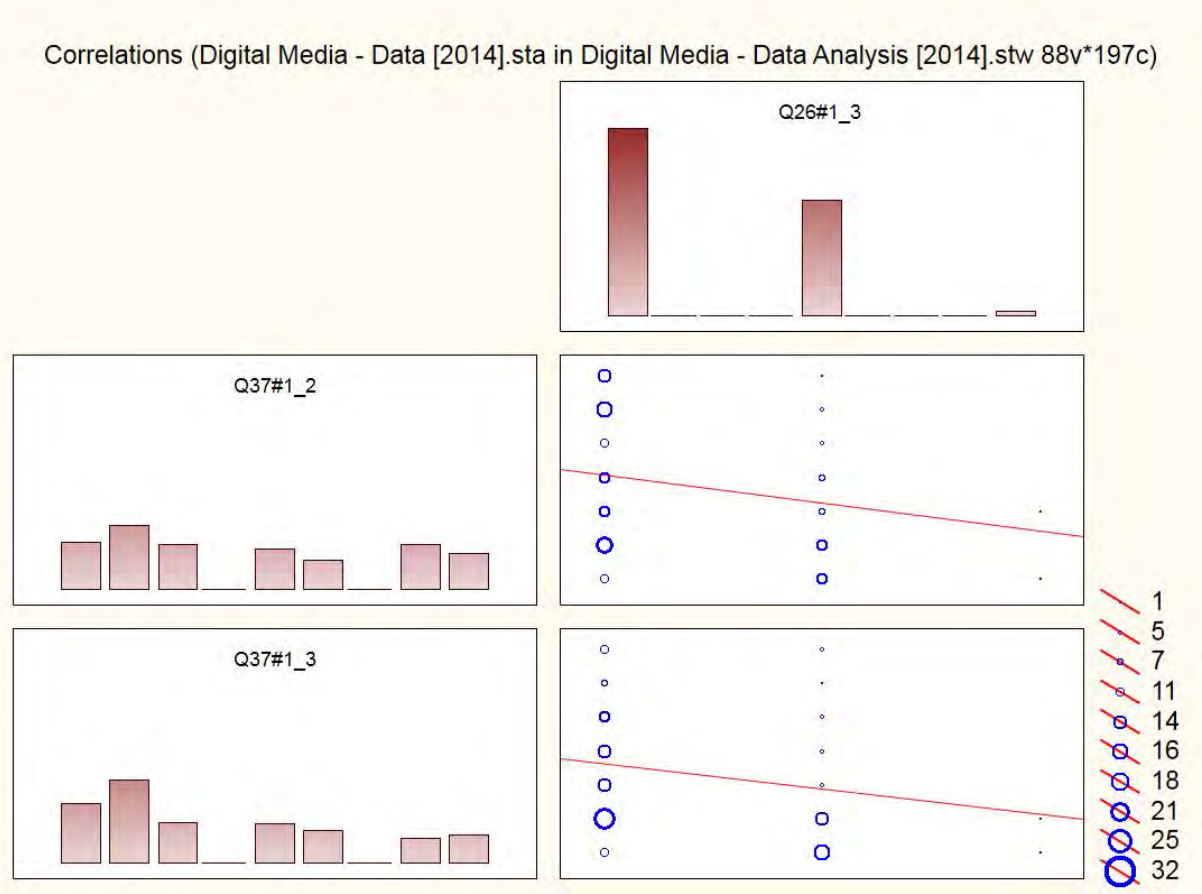

Figure 38: “Attitude” / “Awareness” of “The Pirate Bay”

This indicated a positive attitude towards the practice. This sentiment was backed up by DMC1, who implied that pirate sites are popular as much content is available in a convenient format, for free. DMC2 suggested that people will take the *“path of least resistance”* in order to obtain content and stated that (in his case) there is currently very little need to download pirate music as so much music has been made available (legally) via “YouTube” (in streaming form).

There seems to be the perception, amongst interview subjects, that record companies make much more money from album sales than the artists themselves. They rationalised the act of piracy by suggesting that their money would not go to the artists should they buy media through legitimate channels. Other factors such as international licencing restrictions and digital rights management were offered as reasons for practising piracy.

This research found that the legitimate channels of “YouTube” and “iTunes” were more popular than “The Pirate Bay”. This was demonstrated by 84% of survey respondents and all six interview subjects claiming to having used the “YouTube” service compared to 41% of respondents having used “The Pirate Bay”.

5.4 H_4: Digital music consumers with an awareness of available illegitimate services are more likely to practise digital media piracy

The relationship between the “Awareness” of each of the four services and “Behaviour” was tested. The Spearman’s rank order correlation test results revealed a weak negative correlation between “Awareness” of “The Pirate Bay” and “Behaviour” (n = 197, p < .05). These values were compared to Spearman’s rank order correlation values resulting from correlation testing between “Behaviour” and the three legitimate sources of digital media (“iTunes”, “Deezer”, “YouTube”). Of all these tests, it was found that the only source with a statistically significant correlation result (p < .05) was “The Pirate Bay”. All tables containing raw data resulting from these tests are available in Appendix F. This suggests that this hypothesis is not supported (Table 9, Figure 39). An increase in “Awareness” of “The Pirate Bay” was not shown to result in an increase in piracy “Behaviour”.

Pair of Variables	Marked correlations are significant at p < .05			
	Valid *N*	Spearman *R*	*t*(*N*-2)	*p*-value
The Pirate Bay (Q26_3) & Behaviour (Q34_3)	197	-0.36	-5.30	0.00
The Pirate Bay (Q26_3) & Behaviour (Q34_4)	197	-0.29	-4.20	0.00
The Pirate Bay (Q26_3) & Behaviour (Q34_5)	197	-0.20	-2.87	0.00
The Pirate Bay (Q26_3) & Behaviour (Q37_5)	197	-0.24	-3.42	0.00

Table 9: Spearman’s Rank Order Correlations: “Awareness” of “The Pirate Bay” / “Behaviour”

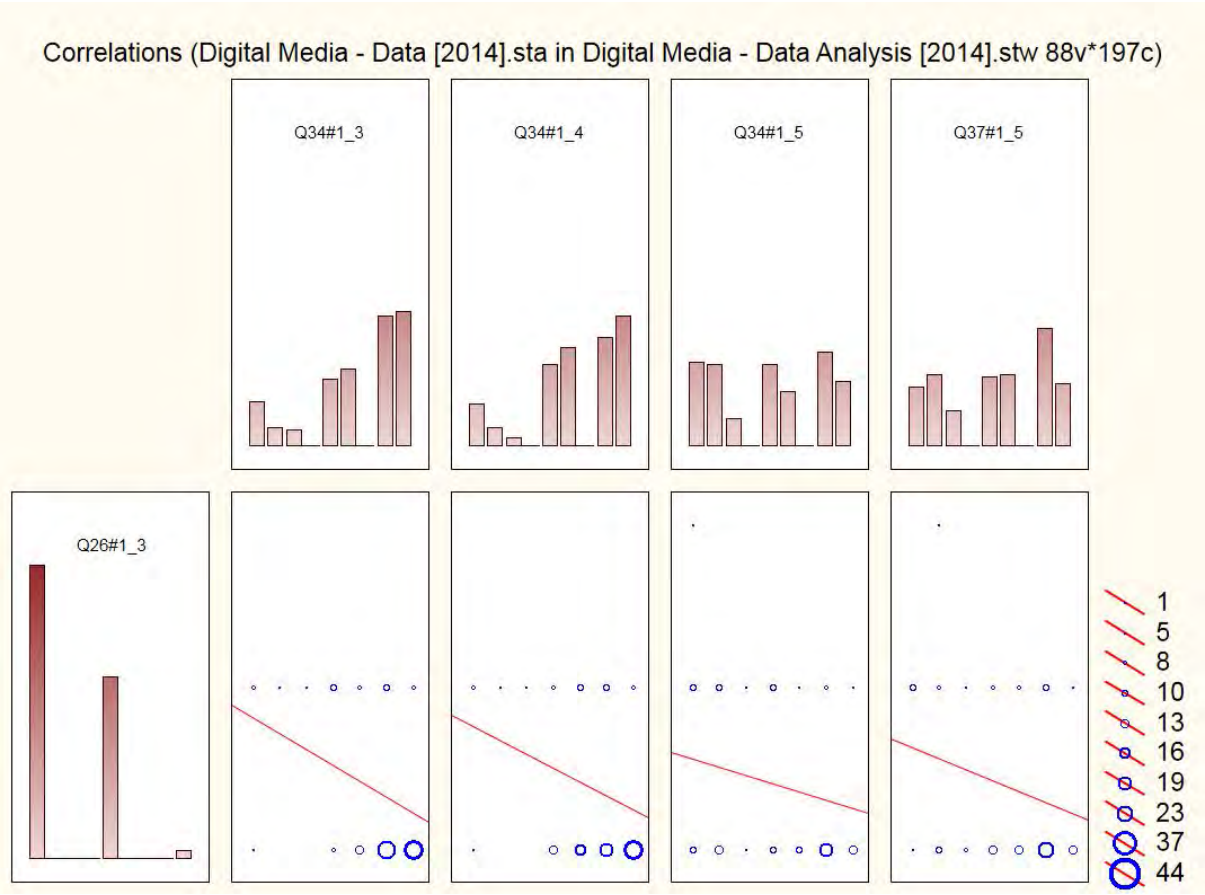

Figure 39: “Awareness” of “The Pirate Bay” / “Behaviour”

Researchers (Higgins et al., 2008) assert that music may be easily located and downloaded from the internet from popular sources such as “The Pirate Bay” (Cooke, 2006). In terms of this research, participants were found to have less of an awareness of the illegitimate channel (“The Pirate Bay”) than the legitimate services being investigated. This finding was reiterated by two fifths of the respondents admitting to having made use of “The Pirate Bay”. The number of survey respondents willing to share their contraband with their peers was found to be greater than those willing to download content themselves. The interview subjects strengthened this point by suggesting that they would all be willing to share digital media. DMC2 made an argument for piracy being unnecessary at the moment as much content is currently available for streaming, for free, via “YouTube”.

5.5 H_5: Digital music consumers believe that the price of digital music available through legitimate channels is too high

A weak positive correlation between the constructs of "Price" and "Attitude" (towards digital media piracy) was revealed by Spearman's rank order correlation test (n = 197, $p < .05$). The component of "Price" was measured by polling respondent's level of agreement with statements suggesting that digital music prices are too high or that digital albums are overpriced. The resulting correlation values have been presented in Table 10, while a scatterplot (Figure 40) provides a summary of these values. These results suggest support for H_5.

Pair of Variables	Marked correlations are significant at $p < .05$			
	Valid *N*	Spearman *R*	*t*(*N*-2)	*p*-value
Price (Q33_2) & Attitude (Q37_2)	197	0.16	2.31	0.02
Price (Q33_2) & Attitude (Q37_3)	197	0.25	3.60	0.00
Price (Q33_3) & Attitude (Q37_2)	197	0.20	2.80	0.01
Price (Q33_3) & Attitude (Q37_3)	197	0.28	4.02	0.00

Table 10: Spearman's Rank Order Correlations: "Price" / "Attitude"

DMC4 suggested that digital music is available on the internet for free and posed the question, *"So why should anyone pay for it?"* This sentiment is consistent with research published by Janssens et al. (2009). The concept of digital music being too expensive has been identified by many researchers (Cooke, 2006; Karaganis, 2011, p. 105; Van der Byl & Van Belle, 2008) as being a key factor influencing digital media piracy. The findings of this research seem to be aligned with those findings, as an analysis of gathered data revealed that more than half of the survey respondents agreed that the cost of digital music is too high, or overpriced, in South Africa.

A mixed set of responses were offered by interview subjects when discussing this issue. One of the musicians (M1) felt that the price of digital music could be lower as

there are no manufacturing costs associated with the reproduction and distribution of digital albums, while DMC4 believes that prices seem fair. DMC3 acknowledged that digital media is priced better (lower) than physical CDs; however, he believes that the price difference is not *"much"* better at the moment.

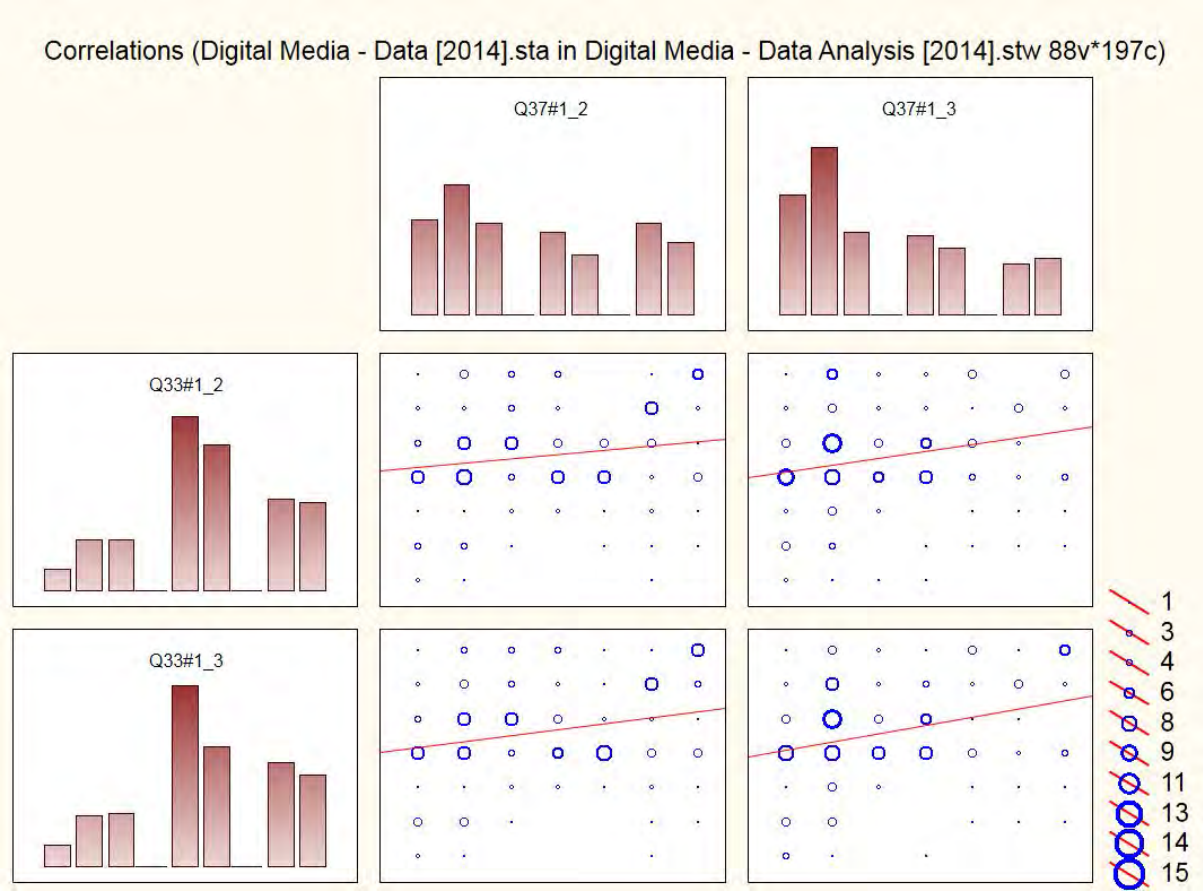

Figure 40: "Price" / "Attitude"

5.6 H_6: Digital music consumers have a positive attitude towards digital music piracy as albums may be more easily obtained from peer-to-peer networks than from existing legitimate sources

Spearman's rank order correlation test was employed to test the relationship between "Convenience" and "Attitude". The test reported a weak to moderate positive correlation between "Convenience" and "Attitude" suggesting support for H_6. These values have been displayed in the accompanying scatterplot (Figure 41) and Table 11 (correlations).

Pair of Variables	Marked correlations are significant at $p < .05$			
	Valid *N*	Spearman *R*	*t*(*N*-2)	*p*-value
Convenience (Q34_1) & Attitude (Q37_2)	197	0.38	5.71	0.00
Convenience (Q34_1) & Attitude (Q37_3)	197	0.37	5.54	0.00
Convenience (Q34_2) & Attitude (Q37_2)	197	0.38	5.78	0.00
Convenience (Q34_2) & Attitude (Q37_3)	197	0.45	7.13	0.00

Table 11: Spearman's Rank Order Correlations: "Convenience" / "Attitude"

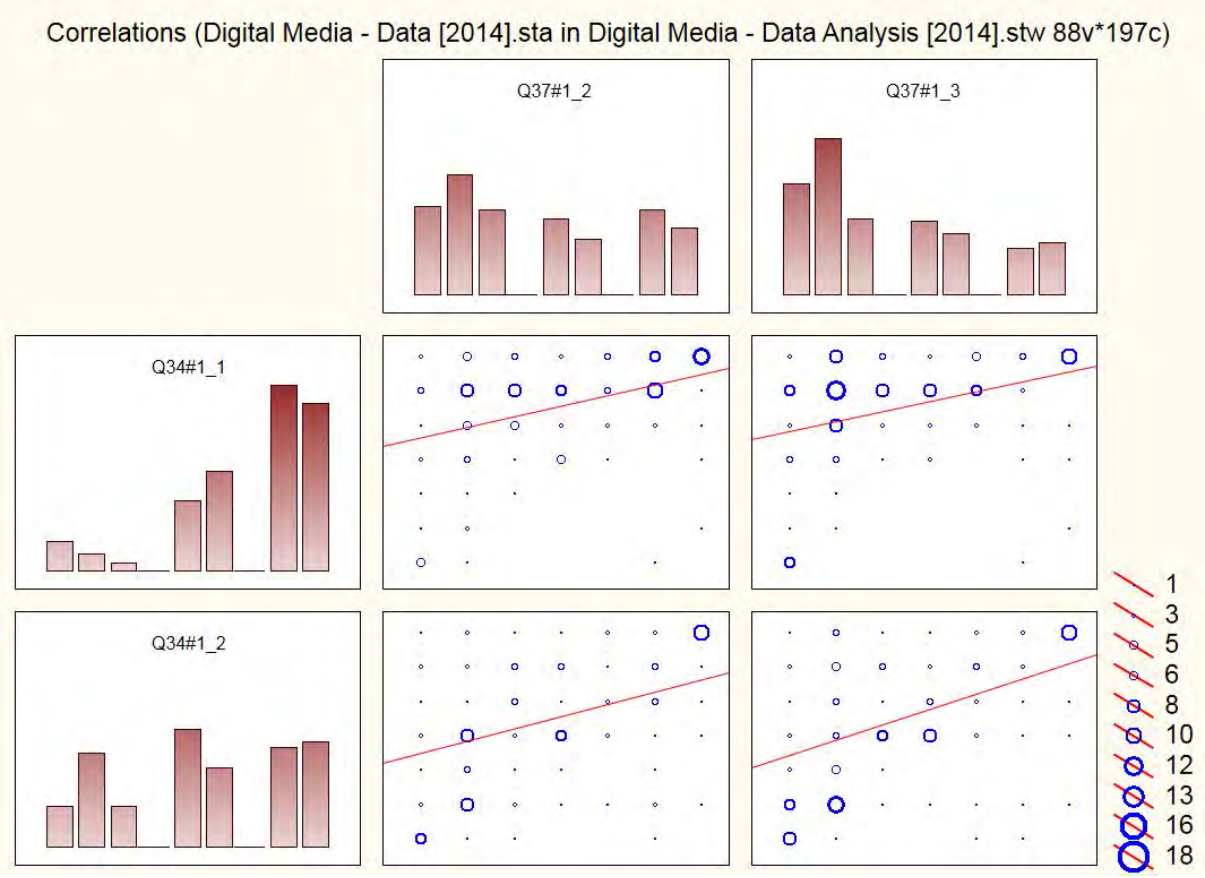

Figure 41: "Convenience" / "Attitude"

Literature posits that illegitimate media may be easily located on the internet (Higgins et al., 2008) which has resulted in an increase in the popularity of the practice. One of the interview subjects, DMC4, stated that artists' complete discographies are easily acquired by means of P2P networks, a comment consistent with previously

published research findings (Van der Byl & Van Belle, 2008). DMC1 suggested that piracy allows parties to acquire media unavailable in South Africa as a result of international licencing restrictions. The legitimate download service investigated, "iTunes", was generally found to be of little use to interview subjects as they commented on its poor search capabilities and a lack of content, which was not "currently popular", i.e. less *commercial* artists or albums.

5.7 H_7: Digital music consumers do not believe that they could be caught and punished for practising digital music piracy

Correlation between "Risk" and "Attitude" (towards digital media piracy) was tested by means of Spearman's rank order correlation test. A weak negative correlation was found to exist between these two constructs at the $p < .05$ level ($n = 197$). This result suggests that H_7 is not supported. Figure 42 presents a summary of these findings in the form of a scatterplot, while Table 12 shows the resulting inter-construct correlation values.

Pair of Variables	Marked correlations are significant at $p < .05$			
	Valid *N*	Spearman *R*	*t*(*N*-2)	*p*-value
Risk (Q36_1) & Attitude (Q37_2)	197	-0.37	-5.63	0.00
Risk (Q36_1) & Attitude (Q37_3)	197	-0.31	-4.60	0.00

Table 12: Spearman's Rank Order Correlations: "Risk" / "Attitude"

A number of researchers (Al-Rafee & Cronan, 2006; Halttunen et al., 2010; Higgins et al., 2008; Hill, 2007; Lysonski & Durvasula, 2008; Moore & McMullan, 2009; Steininger & Rückel, 2013; Yoon, 2010) assert that there is a low perceived risk of being caught and prosecuted amongst those practising digital media piracy. In terms of this research, 61% of South African respondents believe that there is some chance that they may be caught and punished for downloading pirated music from the internet. This finding was at odds with those derived from previous research.

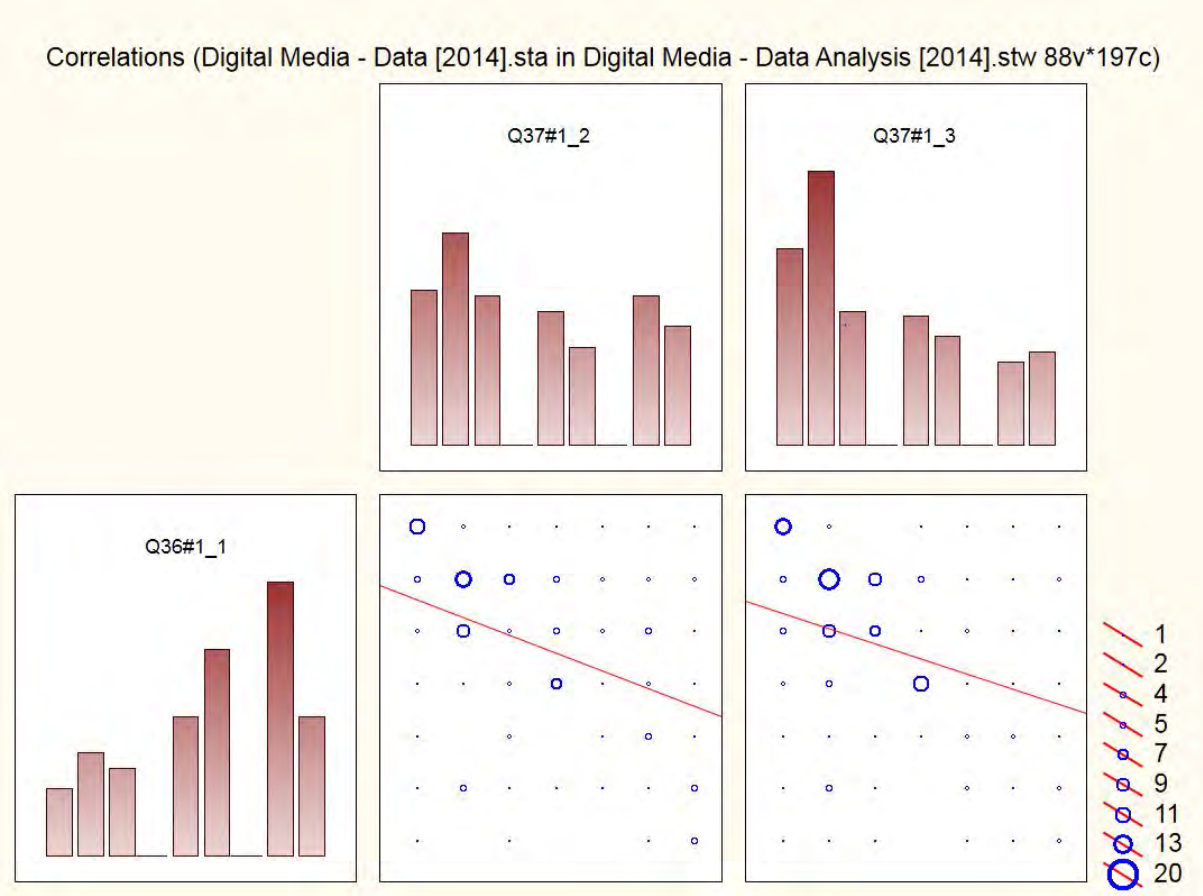

Figure 42: “Risk” / “Attitude”

5.8 H_8: The greater availability of digital music from illegitimate sources positively influences an individual’s attitude towards digital media piracy

The relationship between the “Availability” of content from each of the four services measured (“iTunes”, “Deezer”, “YouTube” and “The Pirate Bay”) and respondents’ “Attitude” was tested. The Spearman’s rank order correlation test revealed a very weak positive correlation between “Availability” (of content found at “The Pirate Bay”) and “Attitude” (n = 197, p < .05). This statistically insignificant correlation value resulted in this hypothesis being deemed unsupported. Figure 43 presents a scatterplot summarising the collected data and Table 13 displays the data values resulting from this test.

Pair of Variables	Marked correlations are significant at $p < .05$			
	Valid *N*	Spearman *R*	*t*(*N*-2)	*p*-value
The Pirate Bay (Q32_3) & Attitude (Q37_2)	197	0.13	1.84	0.07
The Pirate Bay (Q32_3) & Attitude (Q37_3)	197	0.12	1.66	0.10

Table 13: Spearman's Rank Order Correlations: "Availability" of Content from "The Pirate Bay" / "Attitude"

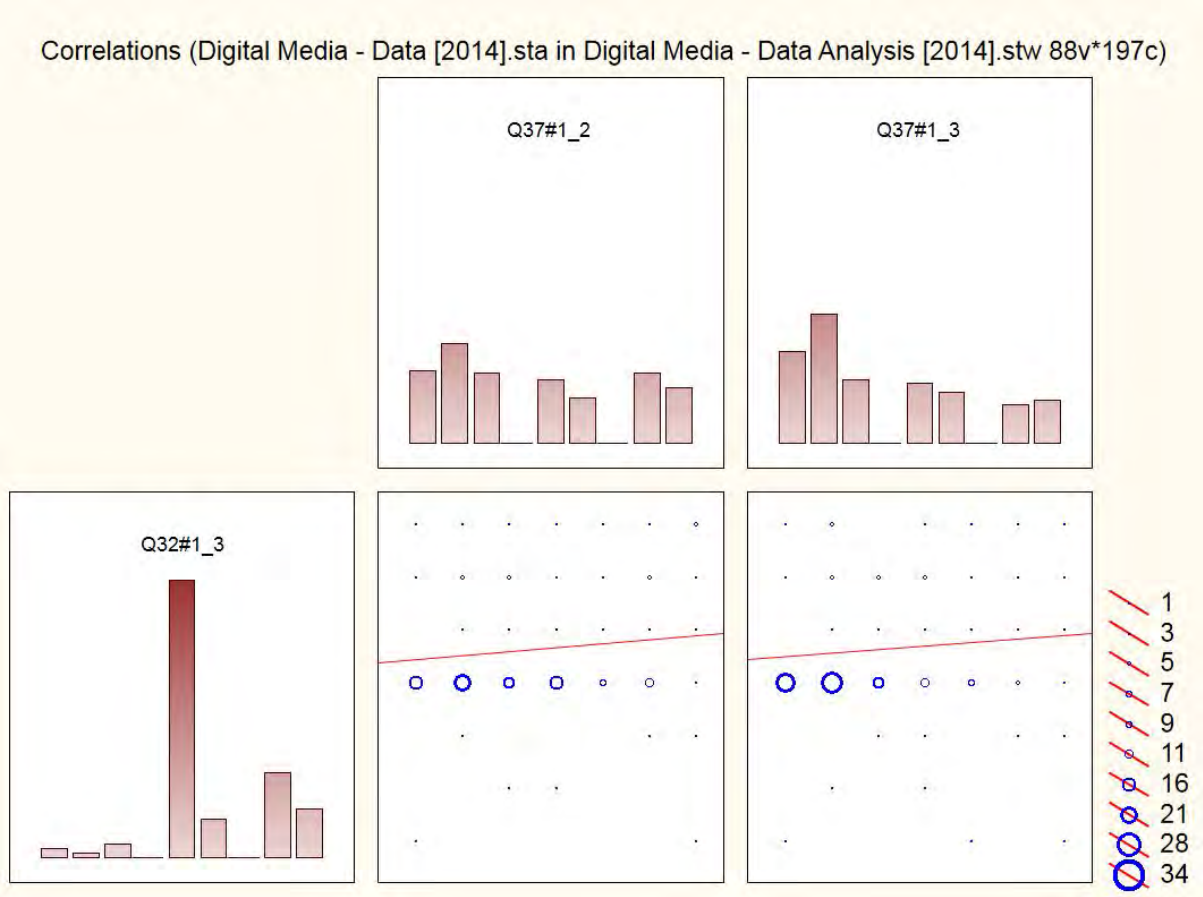

Figure 43: "Availability" of Content from "The Pirate Bay" / "Attitude"

One interview subject (DMC1) suggested that illegitimate channels offer content which otherwise may be unavailable to South Africans as a result of international licencing restrictions – a point which had previously been identified in literature (Sudler, 2013). It was revealed that, in some cases, the effort required to obtain content through legitimate channels was high, as physical CDs had to be imported

into the country at great expense (i.e. high shipping costs and local taxes). This point was emphasised by two interview subjects (DMC3, M1) who asserted that "iTunes" does not offer content beyond that which is currently "popular". Literature posits that many people practise digital media piracy as the internet hosts a vast array of content which is easily accessible at no cost (Halttunen et al., 2010). This point was emphasised by MC4 who suggested that much content is easily available on the internet.

5.9 H_9: Technically proficient digital music consumers will have a positive attitude towards digital music piracy

In order to examine the relationship between "Technical Ability" and "Attitude", Spearman's rank order correlation test was employed. The test revealed a weak positive correlation between the two constructs (n = 197, p < .05), supporting the hypothesis. Evidence of this relationship has been provided in the form of Table 14 (Rank Order Correlations) and Figure 44 (scatterplot).

Pair of Variables	Marked correlations are significant at p < .05			
	Valid *N*	Spearman *R*	*t*(*N*-2)	*p*-value
Technical Ability (Q35_1) & Attitude (Q37_2)	197	0.26	3.79	0.00
Technical Ability (Q35_1) & Attitude (Q37_3)	197	0.25	3.54	0.00
Technical Ability (Q35_2) & Attitude (Q37_2)	197	0.25	3.67	0.00
Technical Ability (Q35_2) & Attitude (Q37_3)	197	0.24	3.43	0.00
Technical Ability (Q35_3) & Attitude (Q37_2)	197	0.20	2.85	0.00
Technical Ability (Q35_3) & Attitude (Q37_3)	197	0.21	3.02	0.00

Table 14: Spearman's Rank Order Correlations: "Technical Ability" / "Attitude"

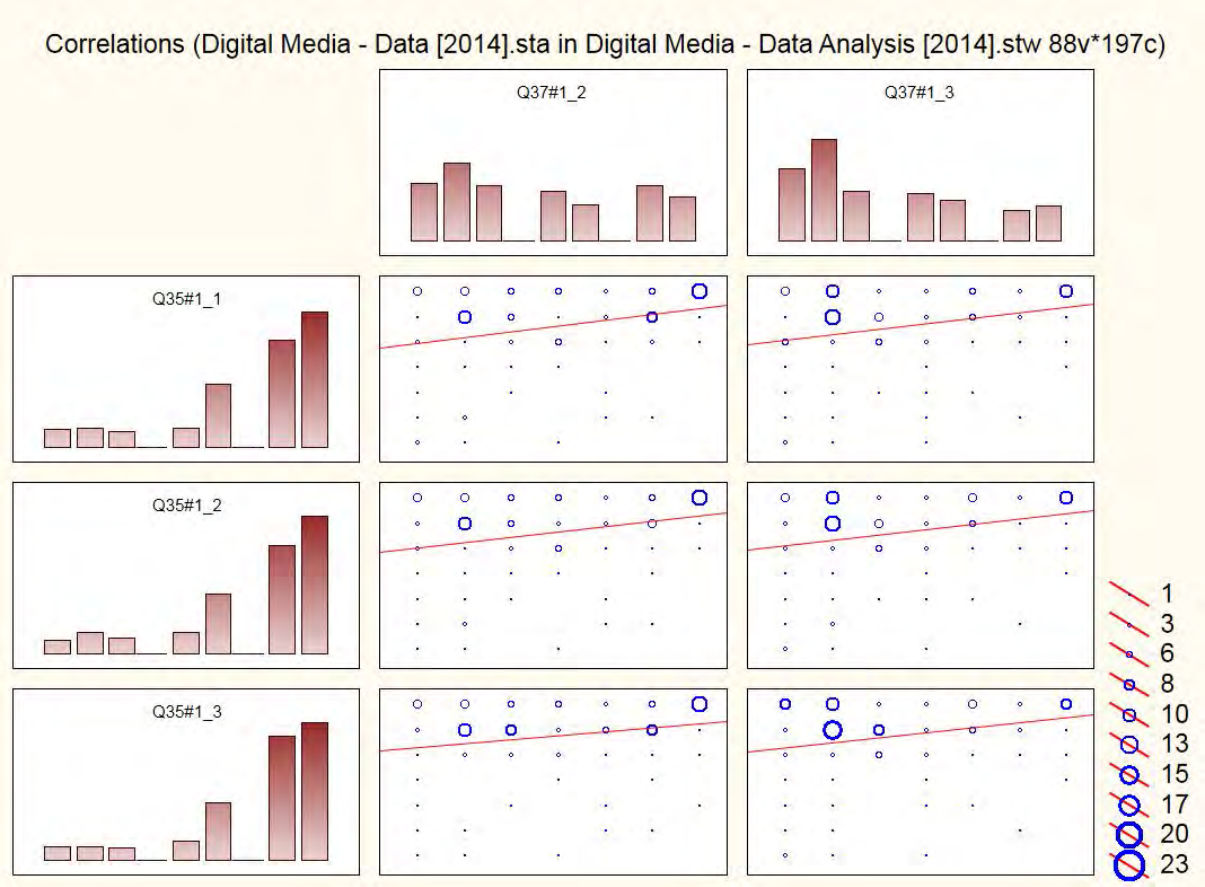

Figure 44: “Technical Ability” / “Attitude”

Researchers (Moore & McMullan, 2009; Veitch & Constantiou, 2011) assert that technically proficient individuals are more likely to seek out pirated digital media on the internet. Based on the collected data, many respondents seemed to fit this profile. More than 80% of respondents indicated that they believe that they have the appropriate technical abilities required to locate and download pirated music from the internet and almost half (47%) of all respondents reported that they worked in the IT industry. A single interview subject (DMC3) referred to himself as being “non-technical”. This party revealed a fear of his computer becoming infected with a computer virus should he go onto the internet to look for contraband. The proliferation of skilled parties seems to support the results yielded by these tests.

5.10 H_{10}: Former students, who are now part of the workforce, will retain a positive attitude towards digital music piracy

This hypothesis was tested by investigating the individual effect of "Age" and "Education" on "Attitude". This was achieved by performing One-way Analysis of Variance (ANOVA) tests for each of these independent constructs and "Attitude". No significant effect exerted by "Age" on "Attitude" (n = 197, p = .05) was observed (Table 15), while the "Education" / "Attitude" (n = 197, p = .05) calculation yielded mixed results (Table 16). These results suggest that H_{10} is not supported.

Variable	Marked effects are significant at $p < .05$							
	***SS* Effect**	***df* Effect**	***MS* Effect**	***SS* Error**	***df* Error**	***MS* Error**	***F***	***p***
Attitude (Q37_2)	54.57	8	6.82	735.07	188	3.91	1.74	0.09
Attitude (Q37_3)	55.45	8	6.93	673.47	188	3.58	1.94	0.06

Table 15: ANOVA: "Age" / "Attitude"

Variable	Marked effects are significant at $p < .05$							
	SS Effect	***df* Effect**	***MS* Effect**	***SS* Error**	***df* Error**	***MS* Error**	***F***	***p***
Attitude (Q37_2)	46.74	8	5.84	742.90	188	3.95	1.48	0.17
Attitude (Q37_3)	58.69	8	7.34	670.24	188	3.57	2.06	0.04

Table 16: ANOVA: "Education" / "Attitude"

Many research projects have focussed on students as their sample (Appendix B) as students tend to practise digital media piracy. Of the data collected for this research, only 5% (n =197) of respondents fell within the "typical" student age range of "18 – 24", minimising the impact of this demographic. As such, this research found that age was not necessarily a significant indicator of willingness to practise piracy.

The second factor tested by this hypothesis was (level of) "Education". Of interest was whether having a particular qualification impacted respondents' willingness to participate in the practice of piracy. It seems that there may be some influence on a party's view of the "wrongness" of downloading pirated music from the internet and his/her level of education.

5.11 H_{11}: Males have a more positive attitude towards digital music piracy than females

A t-test for independent samples was employed to compare "Attitude" (towards digital music piracy) to "Gender". This test yielded an insignificant difference in means between male (n = 137) and female (n = 60) respondents. These results suggest that both males and females have a similar attitude towards digital media piracy ($p < .05$), providing no support for H_{11}. Table 17 has been provided and presents the calculated descriptive statistics.

These findings are consistent with those reported by previously published research which posits that gender does not necessarily influence a person's willingness to commit digital media piracy (Makkonen et al., 2011; Moore & McMullan, 2009; Robertson et al., 2012).

	***M* Male**	***M* Female**	***t*-Value**	***df***	***p***	***N* Male**	***N* Female**	***SD* Male**	***SD* Female**	***F*-ratio Variances**	***p* Variances**
Attitude (Q37_2)	3.85	3.42	1.41	195	0.16	137	60	2.03	1.94	1.09	0.72
Attitude (Q37_3)	3.42	3.02	1.34	195	0.18	137	60	1.97	1.83	1.16	0.53

Table 17: T-test: "Gender" / "Attitude"

5.12 H_{12}: Digital music consumers consider digital music piracy to be a socially acceptable practice, i.e. the subjective norm

The relationship between the constructs "Subjective Norms" and "Attitude" was tested by means of Spearman's rank order correlation test. This test resulted in a strong positive correlation (n = 197, $p < .05$) between these constructs being

observed, as seen in Table 18. These findings are summarised by the scatterplot in Figure 45.

Pair of Variables	Marked correlations are significant at $p < .05$			
	Valid *N*	Spearman *R*	*t*(*N*-2)	*p*-value
Norms (Q37_5) & Attitude (Q37_2)	197	0.78	17.63	0.00
Norms (Q37_5) & Attitude (Q37_3)	197	0.67	12.72	0.00

Table 18: Spearman's Rank Order Correlations: "Subjective Norms" / "Attitude"

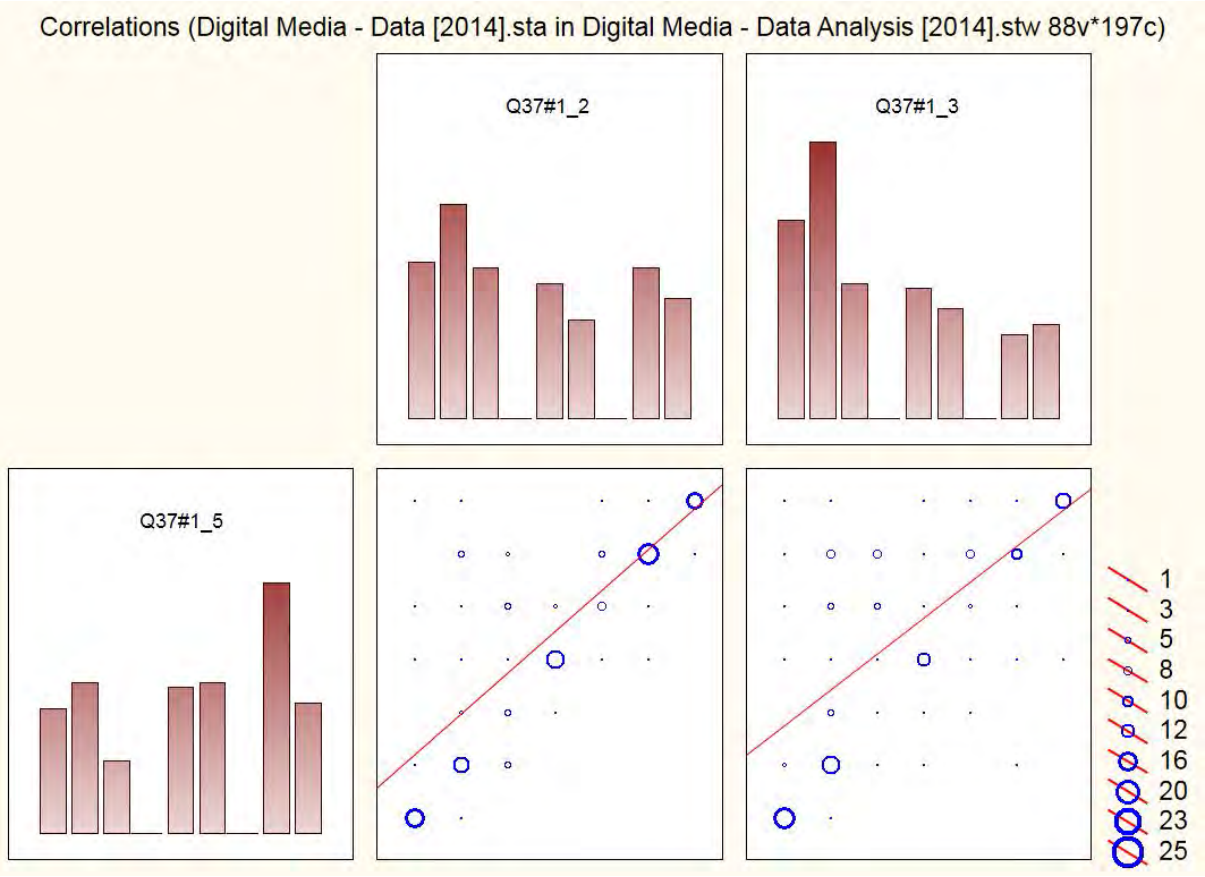

Figure 45: "Subjective Norms" / "Attitude"

Literature (Elster, 1989) asserts that society influences prevailing norms and dictates which behaviour will be considered socially acceptable. This point was raised by

DMC2 who argued that people will always take the *"path of least resistance"* and that piracy is simply a natural extension of this concept.

Data analysis suggested that South Africans consider the practice of digital media piracy to be "wrong". Despite this, survey respondents asserted that they would support the practice and share their digital media with others. Fewer than half (48%) of all participants admitted that they would feel some form of guilt should they obtain contraband from the internet. Interview subjects (DMC2, DMC4 and M1) suggested that digital media sharing is the *"new norm"*. DMC1 suggested that South Africans practise digital media piracy *"because we can"* and made specific reference to the proliferation of shared media, hosted on a network server, within many organisations. Furthermore, none of the interview subjects expressed having a problem with sharing digital music, legitimate or illegitimate, with their peers.

This suggests that digital media piracy is currently considered socially acceptable, a conclusion shared with a number of other papers published on the topic (Amsenga, 2008; Bamberg & Schmidt, 2003; Belleflamme & Peitz, 2010; Cooke, 2006; Cronan & Al-Rafee, 2007; Hill, 2007; Lysonski & Durvasula, 2008; Moore & McMullan, 2009; Phau et al., 2009; Sinha & Mandel, 2008; Veitch & Constantiou, 2011).

5.13 H_{13}: The utility value gained from prior piracy behaviour will positively influence future piracy behaviour

A Spearman's rank order correlation test was used to test the relationship between the constructs of "Habit" and "Behaviour". This test revealed a moderate positive correlation between these two constructs ($n = 197$, $p < .05$) as presented in Table 19. The scatterplot, Figure 46, presents a summary of these findings. This hypothesis is supported as the test revealed a statistically significant positive correlation between the constructs of "Habit" and "Behaviour".

Behavioural theory suggests that habits are formed based upon the positive outcome of previous actions ("Triandis' Theory of Interpersonal Behaviour," 2000). These habits in turn influence future behaviour (Cronan & Al-Rafee, 2007). None of the interview subjects reported having experienced any negative consequences from sharing digital media. According to literature (Lysonski & Durvasula, 2008), these individuals would continue with this practice. This was confirmed by the subjects

who all agreed that they would continue to share digital media with their peers. In terms of the data analysed, it was revealed that more than half (57%) of the survey respondents would continue with the practice, should they not suffer any consequences for their actions. Elster (1989) considers habits to be an individual's "personal" norms. The practice of digital media sharing seems to be a habit amongst research participants, contributing to the practice being considered the norm.

Pair of Variables	Marked correlations are significant at $p < .05$			
	Valid *N*	Spearman *R*	*t*(*N*-2)	*p*-value
Behaviour (Q34_3) & Habit (Q36_4)	197	0.57	9.66	0.00
Behaviour (Q34_4) & Habit (Q36_4)	197	0.53	8.81	0.00
Behaviour (Q34_5) & Habit (Q36_4)	197	0.52	8.44	0.00
Behaviour (Q37_5) & Habit (Q36_4)	197	0.58	10.07	0.00

Table 19: Spearman's Rank Order Correlations: "Habit" / "Behaviour"

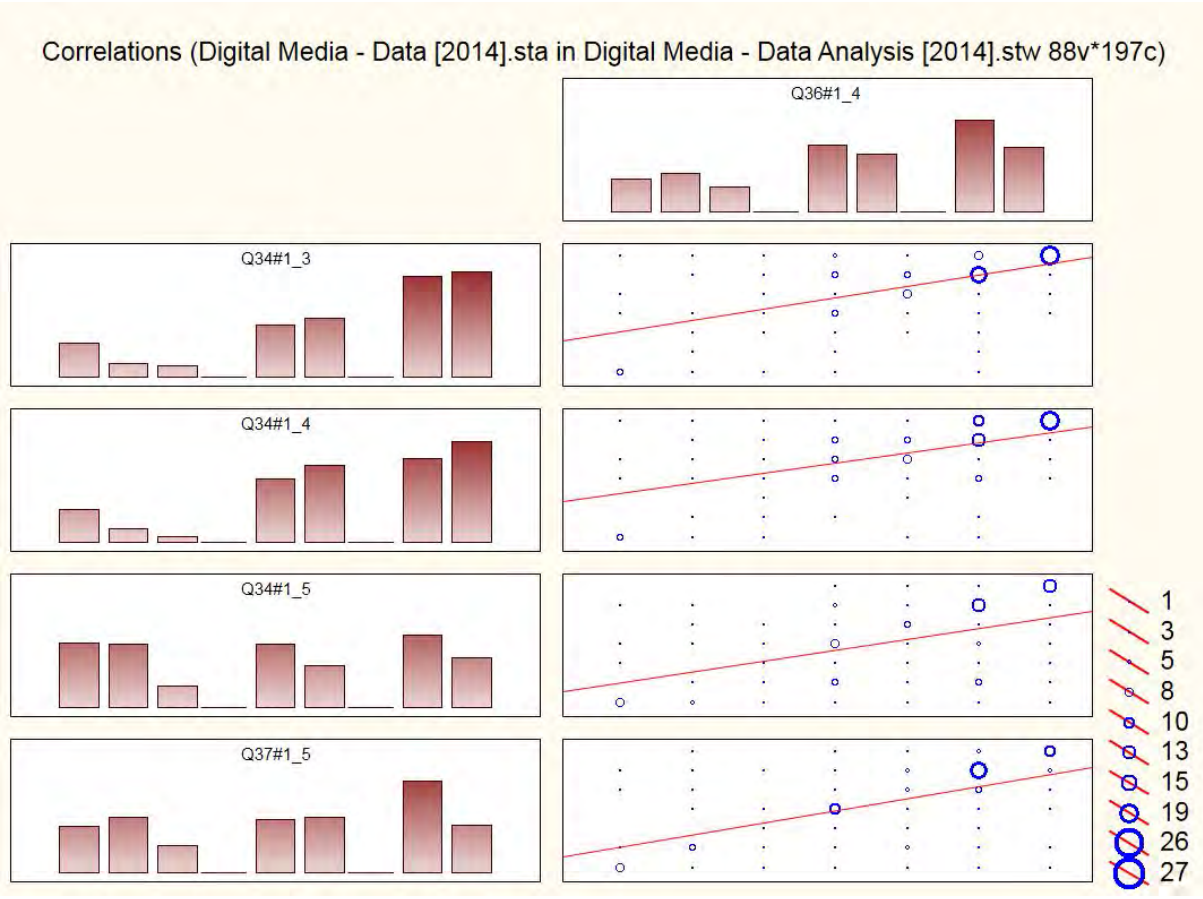

Figure 46: "Habit" / "Behaviour"

6 Conclusions

The practice of music piracy has evolved over the last half century from an individual making a copy of his/her newly purchased LP onto an audio cassette (Sudler, 2013) for his/her friend – to a pre-release version of an album being distributed on the internet in digital (MP3) form, by means of a P2P file-sharing service, allowing thousands of people to obtain copies for free. The practice of digital media piracy has been blamed for the steady decline in physical music sales since the turn of the century and it is suggested that this practice has a substantial financial impact on both business and artists (Recording Industry Association of America, 2013). This global problem has traditionally not been such an issue in South Africa due to the country's lack of sophisticated internet infrastructure (Karaganis, 2011, p. 105). This is changing as South Africa's internet infrastructure is being constantly upgraded, making high-speed, high-capacity internet connections available to many more people. It is predicted that this will result in a greater adoption of digital media piracy practices amongst South Africans, in line with global trends.

Despite the global trend of declining physical music sales, research has shown a steady increase in the sales of digital music available from legitimate sources (International Federation of the Phonographic Industry, 2013a). Improvements to the South African internet infrastructure have resulted in legitimate digital download services such as "iTunes" being considered a viable channel for purchasing digital music. As such, South Africans currently have a number of channels available for the acquisition of digital music, both legitimate and illegitimate. In this context, this research poses the question: ***What effect does the availability of legitimate channels for acquiring digital music have on (digital music) piracy in a South African context?***

Literature suggests a number of factors which influence an individual's willingness to practise digital media piracy. A number of these factors have been included in a conceptual model (Figure 7) which was developed for use in the context of this research. These factors include "Risk", "Availability" of content, "Convenience" of acquiring content and "Price". In terms of psychological research, attitude is often cited as influencing behaviour. As such, individuals' "Attitude" towards digital music piracy has been included in the model, along with the construct of "Behaviour".

A gap in existing literature was discovered in the form of a lack of research amongst a non-student sample. Similarly, it was found that little research had been conducted into South African digital media piracy practices. This research attempted to address these gaps by incorporating the elements of "Age" and "Education" into the conceptual model.

The research methodology employed by this research was positivistic, with a web-based survey instrument used to collect quantitative data. Further qualitative data was collected by means of interviews conducted with two working South African musicians and four digital music consumers. Gathered data was analysed and hypotheses were tested with the aid of statistical tests.

More than two thirds (70%) of all survey participants were male and most respondents had some form of tertiary qualification. The data revealed that almost half of the participants worked in the IT industry and that a large number of the total respondents considered themselves skilled enough to locate and download contraband from the internet. The Western Cape was well represented, as more than three fifths of the survey responses were derived from this province.

In order to address the primary research question, a number of sub questions were posed and investigated. The first of which was: ***What level of awareness of legitimate digital music services available to South Africans exists and what is their attitude towards these services?***

Three legitimate services available to South Africans were investigated ("iTunes", "YouTube" and "Deezer"). In terms of awareness, this research yielded results consistent with those published by the IFPI's international study. The service with the highest level of awareness amongst the research participants was "YouTube" followed by "iTunes" and in final place, "Deezer". Illegitimate channels for acquiring digital media were represented by "The Pirate Bay" which placed third in terms of relative awareness amongst the four services investigated.

The relative adoption rate of these services was consistent with the awareness ranking, i.e. 84% of respondents had used "YouTube", followed by "iTunes" (58%) and "The Pirate Bay" (41%). It was revealed that only 2% of respondents had made use of "Deezer".

Feedback from interview subjects revealed that “YouTube” was generally well liked as it provides users with an easy to use interface. The search functionality offered by the service is considered good as it allows users to easily locate and consume desired media. Both musicians asserted that the service is invaluable to them in their line of work as it offers an extensive library of content, which could easily be referenced.

In contrast, the “iTunes” service received the most criticism from interview respondents as they believe that the software interface was badly designed and provides users with poor search facilities. Three interview subjects (DMC1, DMC2 and M1) made specific reference to being “locked in” should you make extensive use of “iTunes” as content could not easily be migrated onto other devices. Another criticism of the service was the lack of availability of content beyond what which is currently popular, i.e. the works of more “obscure” artists.

The second sub-question sought to reveal factors which influence the use of available legitimate channels: ***Which factors influence South Africans’ support of these services?*** This research question contained a second part: ***Which of these legitimate services do South Africans support?***

The data revealed that almost all (97%) of the respondents had bought a physical CD at some stage and that over half (55%) of the survey participants had purchased digital music. However, a trend of “*non-purchasing*” was observed as few people seem to be buying music currently. It was revealed that in the case of both digital and physical albums, more than half of the respondents had not purchased an album (physical or digital) in the past year. Comparing these findings to data gathered on (illegal) P2P file sharing, 69% of respondents had made use of such a service. Forty-six percent of all participants stated that they had not used a P2P service in the last year. These findings may be the result of an increase in the use of streaming services such as “YouTube”.

Five of the six interview subjects are regular “YouTube” users and identified the service as very easy to use. According to the subjects, the service features good search capabilities which allows users to locate almost any music relatively easily. A significant number (84%) of survey respondents reported making regular use of “YouTube”. More than two thirds (68%) of all respondents had made use of the

service in the previous month, more than double the number which had made use of the second ranked service, "iTunes" (30%). Twenty percent of participants indicated that they had made use of "The Pirate Bay" in the previous month.

The research had a similar focus on illegitimate channels for acquiring digital music, and raised the question: ***Which factors influence South Africans' attitude towards practising digital music piracy?***

One of the interview subjects (DMC1) suggested that South Africans practise piracy *"because we can.*" This sentiment was echoed by DMC2 who noted that people would follow the *"path of least resistance"*, which in this case would be downloading (pirated) digital music from the internet, as this process is easier than making use of a legitimate (download) service. The concept of "Convenience" influencing South Africans' attitude towards digital media piracy was supported by collected survey data.

Analysis of collected data suggested that "Price" and "Technical Ability" were both factors which influenced attitude towards piracy, however, "Gender" was not.

A general attitude of animosity towards record companies was noted amongst interview subjects as they felt that these businesses *"make all of the money"* and that artists are being *"ripped off."* There was a feeling that business models should change as these were considered outdated. Pricing models should also be revisited as there are no (mechanical) "manufacturing" costs associated with the reproduction of digital media.

Other common elements reported as factors promoting piracy were those of digital rights management and international licencing restrictions, which made content unavailable to South Africans through legitimate channels.

The final research question sought to examine current norms: ***Is digital music piracy considered the prevailing subjective norm amongst South Africans?***

Data gathered revealed that South Africans consider the illegal downloading of music from the internet to be wrong, however, they would be willing to share their digital music, both legitimate and illegitimate, with their peers. This sentiment was shared by all interview subjects. Three of these (DMC2, DMC4 and M1) commented

on the practice of digital media sharing being *"the norm".* This suggests that digital music piracy is considered a socially acceptable practice in South Africa.

It was suggested that music consumption by means of streaming (DMC2), rather than by physical download is the future, as more people choose to not own "stuff" (DMC2, DMC4). DMC2 asserts that streaming content is easier than downloading as improved bandwidth becomes available.

6.1 Limitations

The majority of responses (89%) were yielded from two South African provinces (Western Cape 62%, Gauteng 27%) while no responses were recorded from another two (Free State, Northern Cape).

Further statistical analysis of the collected data could be performed in order to gain a deeper understanding of this data. Conducting a multivariate analysis could allow for the investigation of the relationship amongst all elements found within the model – rather than the core constructs directly relevant to this research.

6.2 Further Research

In terms of future research, digital music consumption habits of South Africans could be further investigated. As consumers gain access to improved internet connections – are digital media consumption habits changing? Will users make greater use of streaming (rather than download) services to consume content?

This research has revealed a move towards the adoption of streaming music services. What impact does this have on piracy? Furthermore, do these streaming services influence consumers' purchasing habits?

In terms of business, pricing models could be investigated to establish a pricing level at which consumers would be willing to pay for legitimate (download or streaming) content rather than pirating the music. Would consumers be willing to pay for access to a service if they knew that artists were receiving a portion of the subscription fee? What would such a service be required to offer to convince pirates to pay for media?

Finally, from an information security perspective, an investigation could be conducted into the steps taken (if any) by South Africans to protect themselves from

malicious content, or prosecution, while participating in the practice of digital media piracy.

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Appendix A: Factors Influencing Digital Music Piracy

Author(s)	Price	Save Money	Availability	Conve-nience	No Quality Loss	Social Benefits	Risk	Evaluation	Tech-nology	DRM
Ahn & Yoon, 2008								✔		
Al-Rafee & Cronan, 2006	✔						✔			
Arnab & Hutchison, 2006	✔		✔	✔		✔	✔			✔
Belleflamme & Peitz, 2010		✔	✔	✔	✔		✔	✔	✔	✔
Chen, Shang, & Lin, 2008		✔	✔	✔		✔				
Cooke, 2006	✔									
Cronan & Al-Rafee, 2007				✔					✔	
Dejean, 2009	✔							✔	✔	
Gopal, Sanders, Bhattacharjee, Agrawal, & Wagner, 2004	✔		✔	✔					✔	
Halttunen, Makkonen, & Frank, 2010	✔		✔	✔			✔			✔
Harbaugh & Khemka, 2010	✔									
Higgins, Wolfe, & Marcum, 2008			✔	✔			✔		✔	
Hill, 2007	✔		✔	✔			✔		✔	
Janssens, Van Daele, & Vander Beken, 2009	✔				✔		✔	✔	✔	

Liebowitz, 2006			✔	✔	✔			✔	✔	
Lysonski & Durvasula, 2008	✔				✔		✔		✔	
Moore & McMullan, 2009							✔	✔		
Phau, Teah, & Lwin, 2009	✔									
Robertson, McNeill, Green, & Roberts, 2012							✔			
Sinha & Mandel, 2008	✔				✔		✔			
Siponen, Vance, & Willison, 2012							✔			
Steininger & Rückel, 2013							✔			
Sudler, 2013	✔			✔	✔				✔	
Taylor, Ishida, & Wallace, 2009									✔	
Van der Byl & Van Belle, 2008	✔		✔	✔	✔	✔	✔			
Veitch & Constantiou, 2011	✔	✔					✔			
Yoon, 2010							✔			
	15	**3**	**9**	**11**	**7**	**3**	**16**	**6**	**11**	**3**

Appendix B: Prior Digital Media Piracy Research – Student Sample

Author(s)	Student Sample Size
Al-Rafee & Cronan, 2006	285
Al-Rafee & Rouibah, 2010	n/a
Bamberg & Schmidt, 2003	254
Cronan & Al-Rafee, 2007	280
Gopal, Sanders, Bhattacharjee, Agrawal, & Wagner, 2004	133
Halttunen, Makkonen, & Frank, 2010	14
Higgins, Wolfe, & Marcum, 2008	358
Lysonski & Durvasula, 2008	364
Moore & McMullan, 2009	44
Phau, Teah, & Lwin, 2009	282
Robertson, McNeill, Green, & Roberts, 2012	196
Sinha & Mandel, 2008	n/a
Steininger & Rückel, 2013	1134
Taylor, Ishida, & Wallace, 2009	3181
Veitch & Constantiou, 2011	160
Yoon, 2010	270

Appendix C: Survey Instrument

SECTION A: DEMOGRAPHICS

Q1 Please select your age range:

18-23	24-29	30-34	35-39	40-44	45-49	50-54	55-59	60+

Q2 Please indicate your gender:

Male	Female

Q3 Please select your highest level of education:

Grade 12 / Matric
Graduate Diploma
Post Graduate Diploma
Professional Qualification(s)
Bachelor's Degree
Honours Degree
Master's Degree
Doctor of Philosophy
Other (please specify) _____

Q4 What is your current Job title? _____

Q5 For how many years have you been working full time? _____

1-5	6-10	11-15	16-20	21-25	26-30	31-35	36-40

Q6 In which industry are you currently working?

Advertising
Agriculture
Automotive
Banking
Broadcasting
Education
Entertainment & Leisure
Financial Services
Food, Beverage & Tobacco
Information Technology
Legal
Manufacturing
Publishing
Real Estate
Retail & Wholesale
Service
Sports
Telecommunications
Transportation
Other (please specify) _____

Q7 In which South African province do you currently work?

Eastern Cape
Free State
Gauteng
KwaZulu-Natal
Limpopo
Mpumalanga
Northern Cape

North West
Western Cape
I am currently working outside of South Africa

Q8 In which country are you currently working?

SECTION B: MUSIC CONSUMPTION

Q9 Have you ever bought a physical CD?

Yes	No

Q10 How long ago was your last physical CD purchase?

In the last month	In the last 3 months	In the last 6 months	In the last year	More than 1 year

Q11 How many physical CDs do you usually purchase per year?

0	1-5	6-10	11-15	16-20	20+

Q12 Approximately how many physical CDs do you own?

0	1-10	11-20	21-30	31-40	41-50	50+

Q13 If greater than 50, please supply an approximate number: _____

Q14 Have you ever bought a digital music album?

Yes	No

Q15 How long ago was your last digital music album purchase?

In the last month	In the last 3 months	In the last 6 months	In the last year	More than 1 year

Q16 How many digital music albums do you usually purchase per year?

0	1-5	6-10	11-15	16-20	20+

Q17 Approximately how many digital music albums do you own?

0	1-10	11-20	21-30	31-40	41-50	50+

Q18 If greater than 50, please supply an approximate number: _____

Q19 Have you ever downloaded a digital music album by means of a peer-to-peer network service?

Yes	No

Q20 How long ago did you last download a digital music album by means of a peer-to-peer network service?

In the last month	In the last 3 months	In the last 6 months	In the last year	More than 1 year

Q21 How many digital music albums do you usually download by means of a peer-to-peer network service in a year?

0	1-5	6-10	11-15	16-20	20+

Q22 Approximately how many digital music albums have you downloaded by means of a peer-to-peer network service?

0	1-10	11-20	21-30	31-40	41-50	50+

Q23 If greater than 50, please supply an approximate number: _____

Q24 What is your preferred digital music format?

MP3	WAV	FLAC	M4A	AAC	WMA	Other

(Other: please specify) _____

Q25 What is your preferred style of music?

Classical	Pop	R & B	Jazz	Electronic
Blues	Rock	Metal	Alternative	Other

(Other: please specify) _____

SECTION C: DIGITAL MUSIC SERVICES

Q26 Are any of these services available to users in South Africa?

iTunes (Apple)	Yes	Don't Know	No
Deezer	Yes	Don't Know	No
The Pirate Bay	Yes	Don't Know	No
YouTube	Yes	Don't Know	No

Q27 Have you made use of any of these services to download or listen to digital music?

iTunes (Apple)	Yes	No
Deezer	Yes	No
The Pirate Bay	Yes	No
YouTube	Yes	No

Q28 How long ago did you last make use of any of these services to download or listen to digital music?

iTunes (Apple)	Never	In the last month	In the last 3 months	In the last 6 months	In the last year	More than 1 year
Deezer	Never	In the last month	In the last 3 months	In the last 6 months	In the last year	More than 1 year
The Pirate Bay	Never	In the last month	In the last 3 months	In the last 6 months	In the last year	More than 1 year
YouTube	Never	In the last month	In the last 3 months	In the last 6 months	In the last year	More than 1 year

Note: The remainder of the questions have responses which are measured by means of a 7-Point Likert scale (text values provided).

Strongly Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Strongly Agree

Please select your level of agreement with the following statements:

Q30 I believe that iTunes provides users with a convenient service.
I believe that Deezer provides users with a convenient service.
I believe that The Pirate Bay provides users with a convenient service.
I believe that YouTube provides users with a convenient service.

Q32 I am usually able to find the music that I am looking for when using iTunes.
I am usually able to find the music that I am looking for when using Deezer.
I am usually able to find the music that I am looking for when using The Pirate Bay.
I am usually able to find the music that I am looking for when using YouTube.

Q33 I believe that the price of a physical CD is too high.
I believe that the price of a digital music album is too high.

I believe that digital music albums are overpriced.

I believe that a digital music album is well priced compared to the price of its equivalent physical CD.

I could save money by downloading "pirated" music from the internet.

Q34 It is more convenient to download a "pirated" copy of a music album from the internet than it is to purchase a physical CD from a brick-and-mortar store.

It is more convenient to download a "pirated" copy of a music album from the internet than it is to make use of a legitimate download service such as iTunes.

I would download a "pirated" copy of a digital music album which is unavailable from a physical store.

I would download a "pirated" copy of a digital music album which is unavailable from a legitimate download service such as iTunes.

I would download a "pirated" copy of a digital music album before checking whether it is available from a legitimate download service such as iTunes.

Q35 I believe that I have the necessary skills to locate "pirated" music on the internet.

I believe that I have the necessary skills to download "pirated" music from the internet.

I believe that I have the necessary resources to download "pirated" music from the internet.

Q36 If I download "pirated" music from the internet, there is a risk that I may be caught and prosecuted.

I believe that the “value” that I would gain from downloading "pirated" music is worth the risk of being caught.

South Africa has legislation which criminalizes the illegal downloading of digital music.

If I was to download "pirated" music from the internet and suffered no consequences, I would do so again.

Q37 There is nothing wrong with sharing my legitimately purchased digital music with my friends, colleagues or family.

There is nothing wrong with sharing "pirated" digital music with my friends, colleagues or family.

There is nothing wrong with downloading "pirated" digital music from the internet.

I would share my legitimately purchased digital music with my friends, colleagues or family.

I would share "pirated" digital music with my friends, colleagues or family.

I would feel guilty if I downloaded "pirated" music from the internet.

SECTION D: FURTHER PARTICIPATION *(OPTIONAL)*

Q38 I am willing to be interviewed in order to participate further with this research.

Contact details: _____

Capacity: ☐ Recording artist / musician

☐ Digital music consumer

Thank you for your time.

Appendix D: Interview Script

Note: This semi-structured interview script will be used as a starting point for discussions with respondents. Recording artists will be asked questions from all of the sections, while digital music consumers will be asked questions from Sections A, C and D only.

SECTION A: GENERAL INFORMATION

1. Have you completed the online survey component of this research?
2. Name? *(optional)*
3. Age?

   (Ranges: 18-23, 24-29, 30-34, 35-39, 40-44, 45-49, 50-54, 55-59, 60+)
4. Gender?
5. What is your highest level of education?
6. Current job title?
7. For how many years have you been working?
8. In which industry do you work?
9. In which province do you currently live?

SECTION B: RECORDING ARTIST

10. How long have you been (a) performing and (b) releasing albums?
11. How many albums have you recorded and released?
12. When were they released?
13. In which formats are these albums available? (e.g. LP, CD, digital, etc.)?
14. From which channels are these albums available? (e.g. Online retailers, physical stores, iTunes)
15. Are your works available for streaming online?
16. Do you make use of social media to promote your works?
17. *(if yes)* Which ones?
18. *(if no)* Why not?

19. Have you had any experience with your albums being pirated?

20. *(if yes)* How did you discover this?

21. *(if yes)* What was your reaction?

22. *(if yes)* Were you able to do anything about it?

23. *(if no)* How would you feel if your albums were being pirated?

24. Do you think that piracy could be affecting your livelihood?

25. What are your thoughts on digital music piracy? *(general discussion)*

26. Do you think that people should be punished for pirating music, how?

SECTION C: DIGITAL MUSIC CONSUMER

Legitimate Sources of Digital Music:

iTunes

27. What are your thoughts on iTunes as a *(legitimate)* source of digital music?

28. Do you think that music from iTunes is reasonably priced – relative to the price of a physical CD available from a traditional store?

29. Do you have any thoughts on the pricing model of digital vs. physical music?

30. Have you purchased music from iTunes? *(Frequency of use?)*

31. *(if yes)* Which *(regional)* store?

32. *(if yes)* Does this service offer the content that you are looking for? (e.g. artists, albums, etc.)

33. *(if yes)* What are your thoughts on the (iTunes) user experience?

Deezer

34. What are your thoughts on Deezer as a *(legitimate)* source of digital music?

35. Have you made use of Deezer? *(Frequency of use?)*

36. *(if yes)* Does this service offer the content that you are looking for? (e.g. artists, albums, etc.)

37. *(if yes)* What are your thoughts on the (Deezer) user experience?

YouTube

38. What are your thoughts on YouTube as a source of digital music?

39. Have you made use of YouTube? *(Frequency of use?)*

40. *(if yes)* Does this service offer the content that you are looking for? (e.g. artists, albums, etc.)

41. *(if yes)* What are your thoughts on the (YouTube) user experience?

Other Sources?

42. Do you share your purchased digital media with others? *(e.g. friends and family, etc.)*

43. Do you have any experience with any other (legitimate) sources of digital music? *(general discussion)*

Illegitimate Sources of Digital Music

44. Have you made use of any form of peer-to-peer network service in order to acquire digital music?

45. Which sources do you use to obtain your "seeds"? (e.g. websites, forums, user groups, etc.)

46. Do you share your downloads with others (online, in the "real world")?

47. What motivates you to download (and share) digital music? *(general discussion)*

48. Do you believe that the value that you get from "pirated" music outweighs the risk of being caught and (perhaps) receiving a fine? *(general discussion)*

49. Do you listen to the music you download? *(general discussion)*

Digital vs. Physical Music "Habits"

50. How has digital music changed your (music) buying habits? *(general discussion)*

51. How has digital music changed your (music) listening habits? *(general discussion)*

52. What is your current (music) format of choice?

SECTION D: WRAP UP

53. Is there anything else that you would like to address which has not been discussed in this interview?

Thank you for your time.

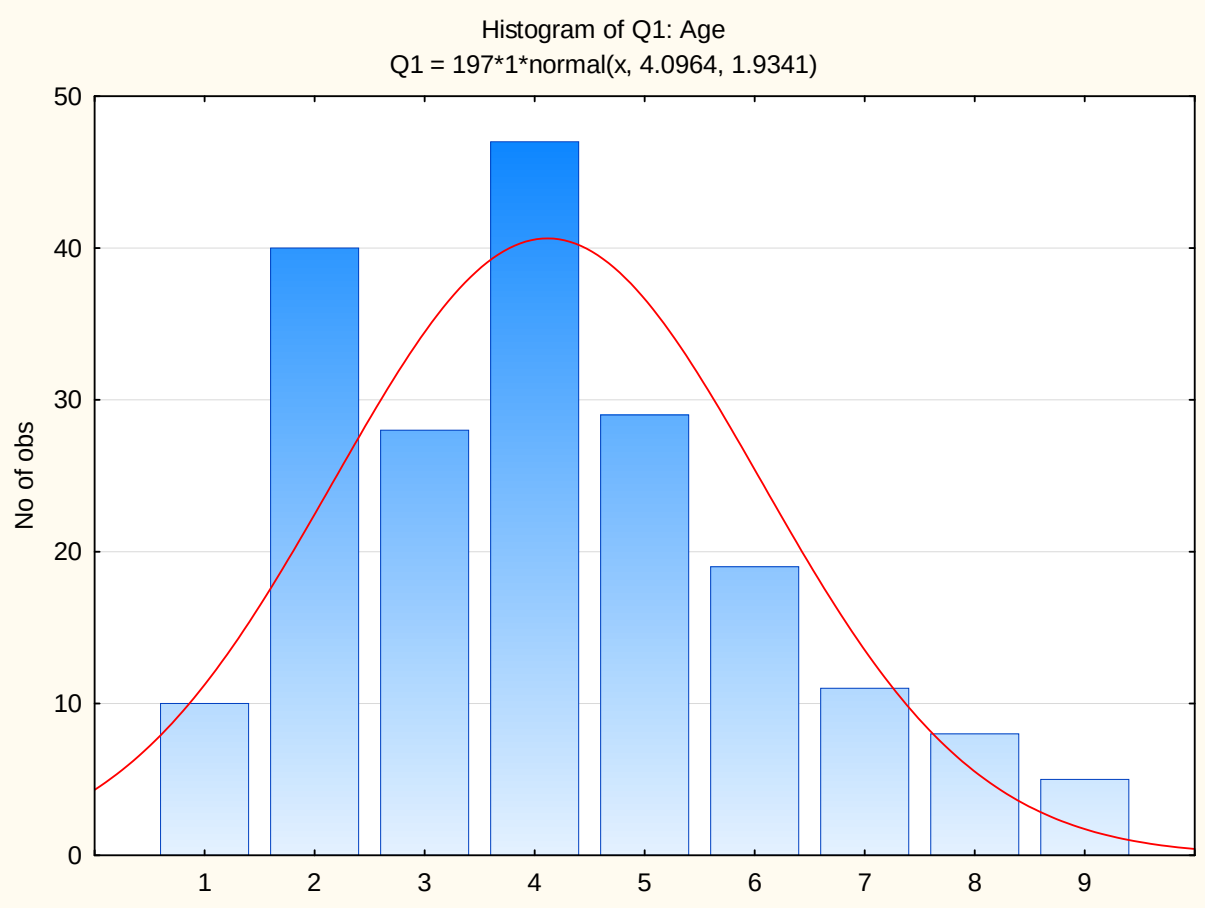
Appendix E: Raw Survey Results

All data contained in this appendix has been exported from STATISTICA and are presented in "raw" format for reference purposes.

SECTION A: DEMOGRAPHICS

Q1 Please select your age range:

Variable	Descriptive Statistics								
	Valid N	Mean	Median	Mode	Frequency of Mode	Minimum	Maximum	Variance	Std.Dev.
Q1	197	4.096447	4.000000	4.000000	47	1.000000	9.000000	3.740651	1.934076

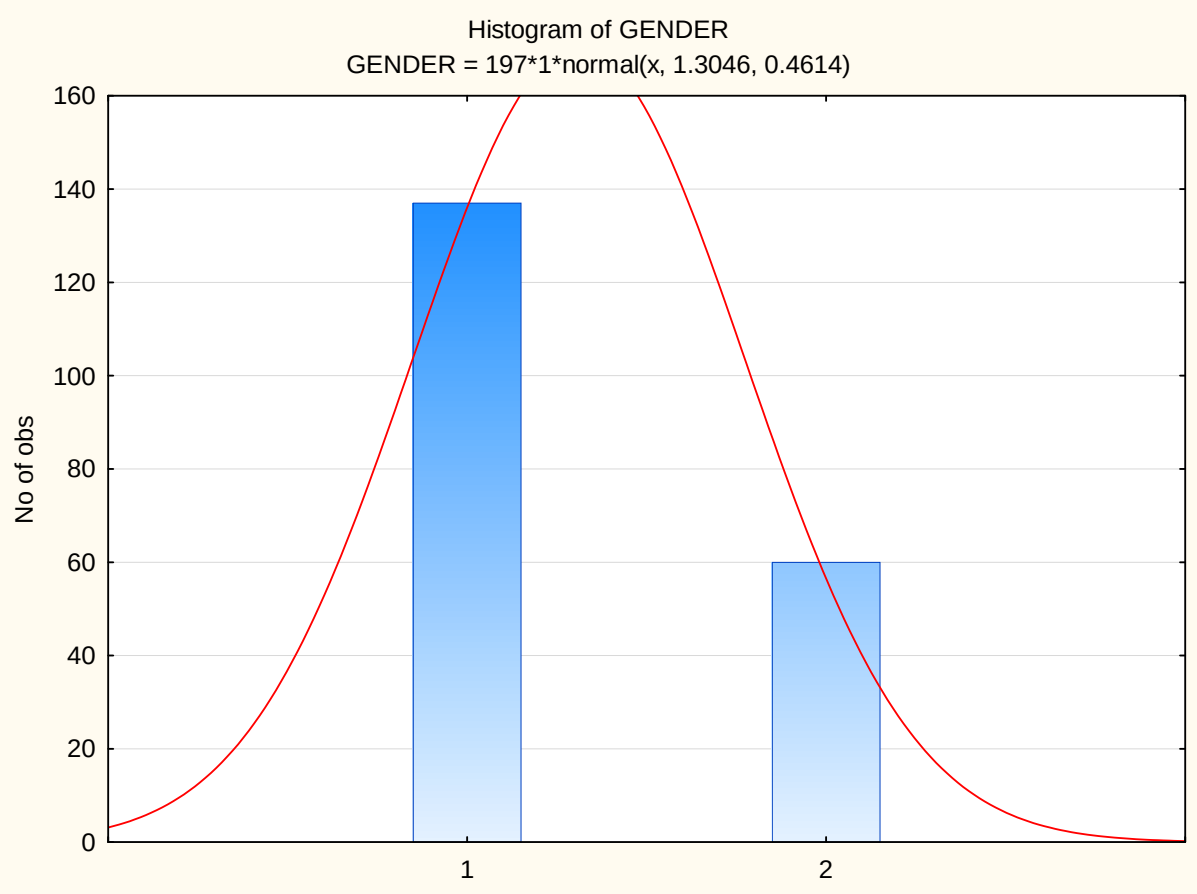


Id	Age Range	Count	%
1	18-23	10	5.08%
2	24-29	40	20.3%
3	30-34	28	14.21%
4	35-39	47	23.86%
5	40-44	29	14.72%

6	45-49	19	9.64%
7	50-54	11	5.58%
8	55-59	8	4.06%
9	60+	5	2.54%

Q2 Please indicate your gender:

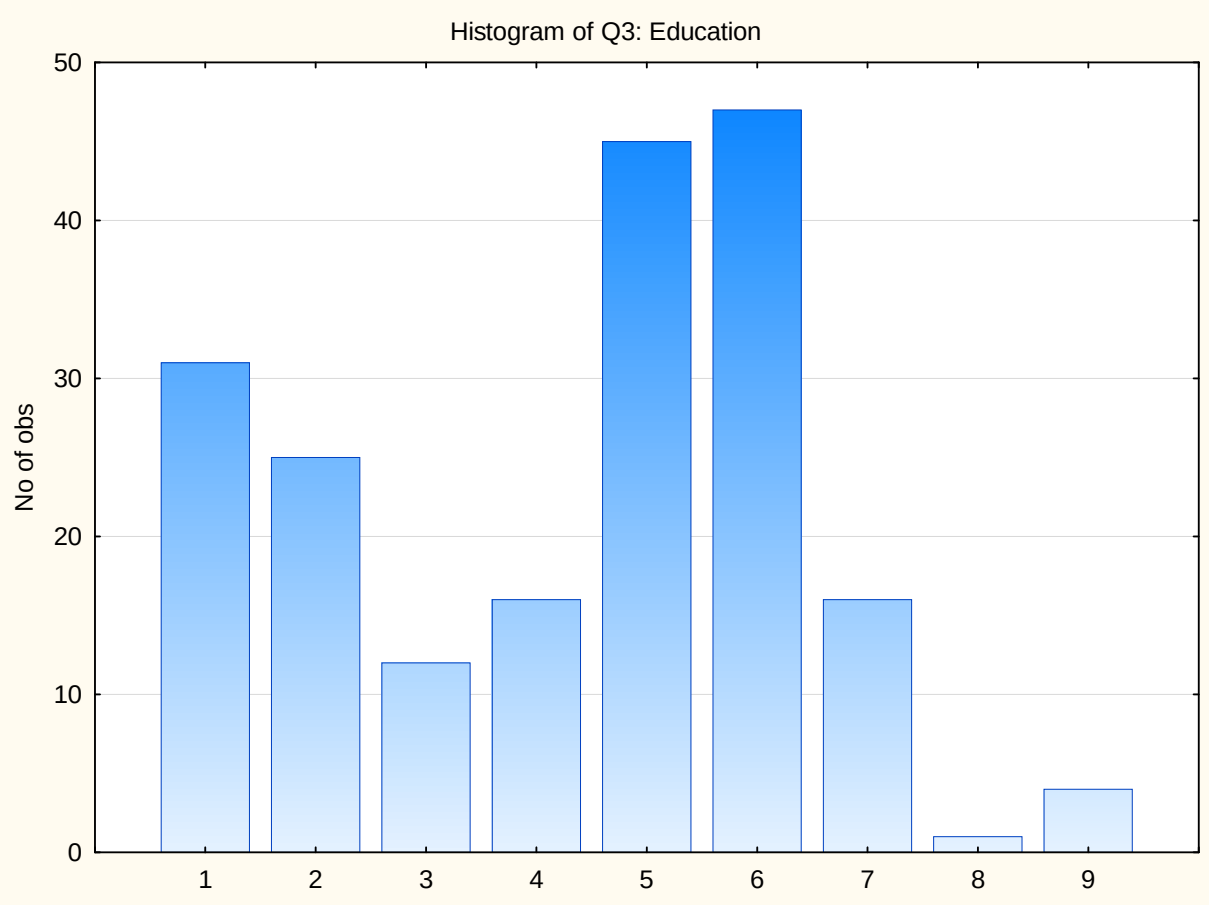
Variable	Descriptive Statistics								
	Valid N	Mean	Median	Mode	Frequency of Mode	Minimum	Maximum	Variance	Std.Dev.
GENDER	197	1.304569	1.000000	1.000000	137	1.000000	2.000000	0.212887	0.461397



Id	Gender	Count	%
1	**Male**	137	69.54%
2	**Female**	60	30.46%

Q3 Please select your highest level of education:

Variable	Descriptive Statistics								
	Valid N	Mean	Median	Mode	Frequency of Mode	Minimum	Maximum	Variance	Std.Dev.
Q3	197	4.284264	5.000000	6.000000	47	1.000000	9.000000	4.428986	2.104516



Id	Education Level	Count	%
1	Grade 12 / Matric	31	15.74%
2	Graduate Diploma	25	12.69%
3	Post Graduate Diploma	12	6.09%
4	Professional Qualification(s)	16	8.12%
5	Bachelor's Degree	45	22.84%
6	Honours Degree	47	23.86%
7	Master's Degree	16	8.12%
8	Doctor of Philosophy	1	0.51%
9	Other	4	2.03%

Education Level: Other	Count
A-Levels	1
Electrician (Trade Qualification)	1
General National Vocational Qualifications	1
Higher Education Entrance Qualification	1

Q4 What is your current Job title?

Top Job Titles	Count		Count
Software Developer	15	Administrator	2
Business Analyst	7	Analyst	2
Developer	7	Entrepreneur	2
Student	8	Executive	2
Unspecified	5	Graphic Designer	2
Credit Analyst	4	IT Systems Engineer	2
Director	4	Junior Developer	2
Senior Developer	4	Retired	2
Software Engineer	4	SAP Consultant	2
Business Owner	3	Senior Business Analyst	2
IT Consultant	3	Senior Lecturer	2
IT Manager	3	Software Architect	2
Programmer	3	System Administrator	2
Senior Software Developer	3	Teacher	2

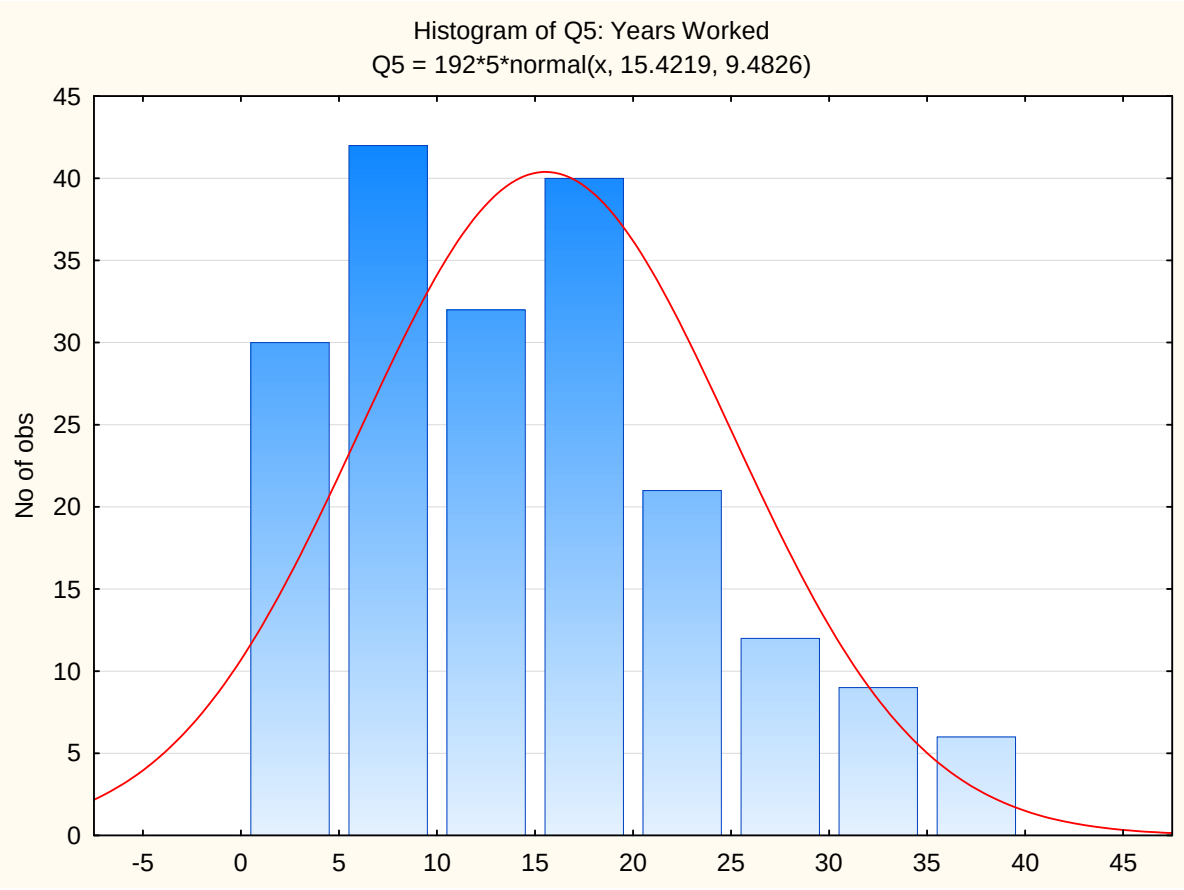
Other Job Titles

Actuarial Consultant / Systems and Research programmer	1	IT Manager	1
Admin Clerk	1	IT Application Architect	1
Advocate	1	IT Functional Analyst	1
Agile Coach	1	IT Security Technician	1
Airfreight Manager	1	IT Specialist	1
Analyst/Programmer	1	IT Support Specialist	1
Archivist	1	IT Systems Analyst	1
Assistant Planner	1	IT Team Lead	1
Assurance Advisor	1	IT Tech	1
Broker Consultant	1	Java Developer	1
Business Consultant	1	Lead developer	1
Business Continuity Manager	1	Manager	1
C.O.O	1	Managing Director	1
Cake Decorator	1	Marketing Manager	1
Chef	1	Military Officer	1
Chief Controller	1	Musician	1
CIO	1	Office Manager	1
Civil Engineering Technologist	1	Operations Manager	1
Computer Programmer	1	Pre-school Teacher	1
Computer Systems Analyst	1	Principal GIS Analyst	1
Consultant	1	Product Manager	1
Corporate Credit Sanctioner - Banking	1	Project Manager	1
Credit Clerk	1	Relationship Executive	1
Credit Controller	1	Representative	1
Department Head - Lecturer	1	Research Technician	1

Deputy Chief Technology Officer	1	Risk Manager	1
Deputy Headmaster	1	SDM	1
Deputy Manager: IT	1	Self Employed	1
Design Director	1	Senior Admin Clerk	1
Designer	1	Senior Analyst/Programmer	1
DevOps Administrator	1	Senior Designer	1
Digital Software Development Manager	1	Senior Librarian	1
Distribution	1	Senior Staff Engineer	1
Draftsperson	1	Senior Systems Administrator and Developer	1
Editor	1	Software Developer - Team Lead	1
Electrician	1	Software Developer/Engineer	1
Financial Controller	1	Software Development Manager	1
Fraud Analyst	1	Specialist: RAN Performance Management	1
Freelance Photographer	1	Statistician	1
Freelance software developer	1	Store Manager	1
Front Office Manager	1	System Engineer	1
		Team Lead	1
Graduate	1	Technical Project Lead	1
Guest Lodge Hostess	1	Technical Specialist	1
Housewife	1	Technology Manager	1
HR Business Partner	1	Transactional Banker	1
Industrial Business Management Assistant	1	Unemployed	1
Integration Specialist	1	Vocal Teacher	1
		Web Administrator	1

Q5 For how many years have you been working full time?

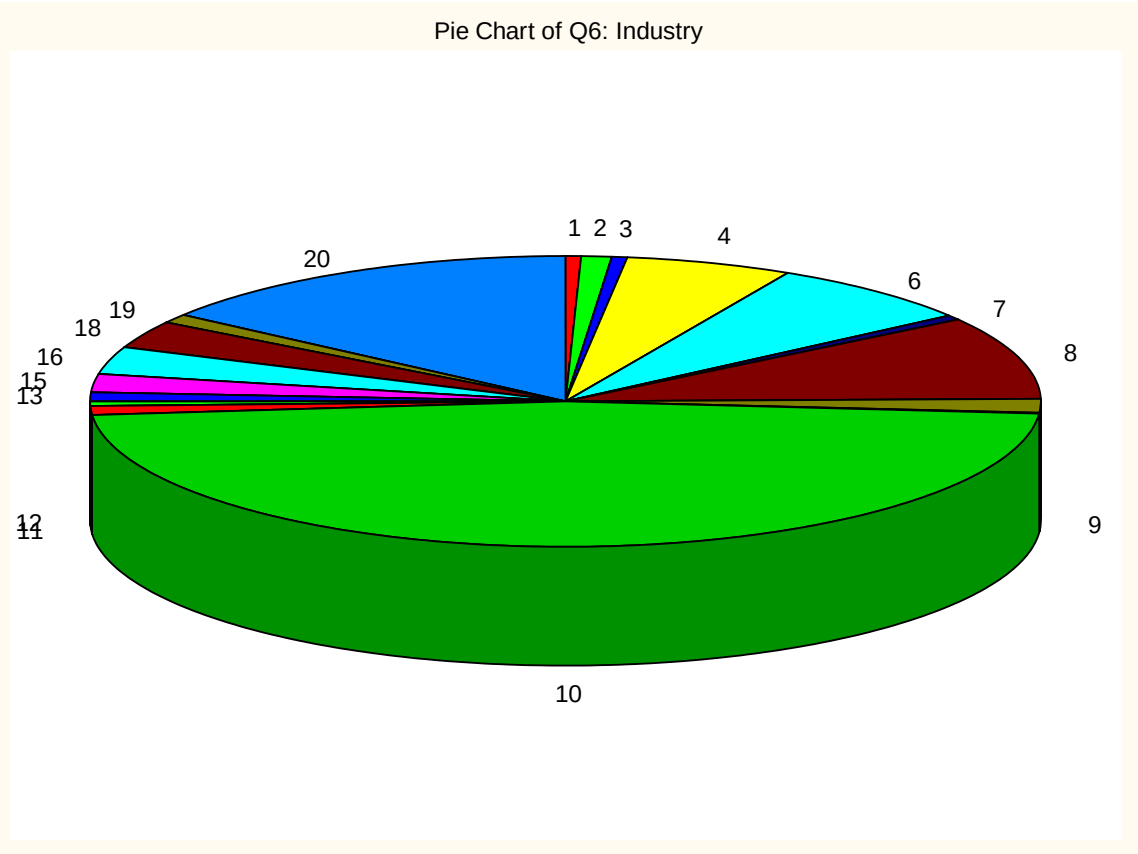
Variable	Descriptive Statistics								
	Valid N	Mean	Median	Mode	Frequency of Mode	Minimum	Maximum	Variance	Std.Dev.
Q5	192	15.42188	15.00000	20.00000	15	1.000000	40.00000	89.92057	9.482646



Years Worked	Count	%
1-5	30	15.63%
6-10	42	21.88%
11-15	32	16.67%
16-20	40	20.83%
21-25	21	10.94%
26-30	12	6.25%
31-35	9	4.69%
36-40	6	3.13%

Q6 In which industry are you currently working?

Variable	Descriptive Statistics								
	Valid N	Mean	Median	Mode	Frequency of Mode	Minimum	Maximum	Variance	Std.Dev.
Q6	195	11.15897	10.00000	10.00000	92	1.000000	20.00000	23.12408	4.808751

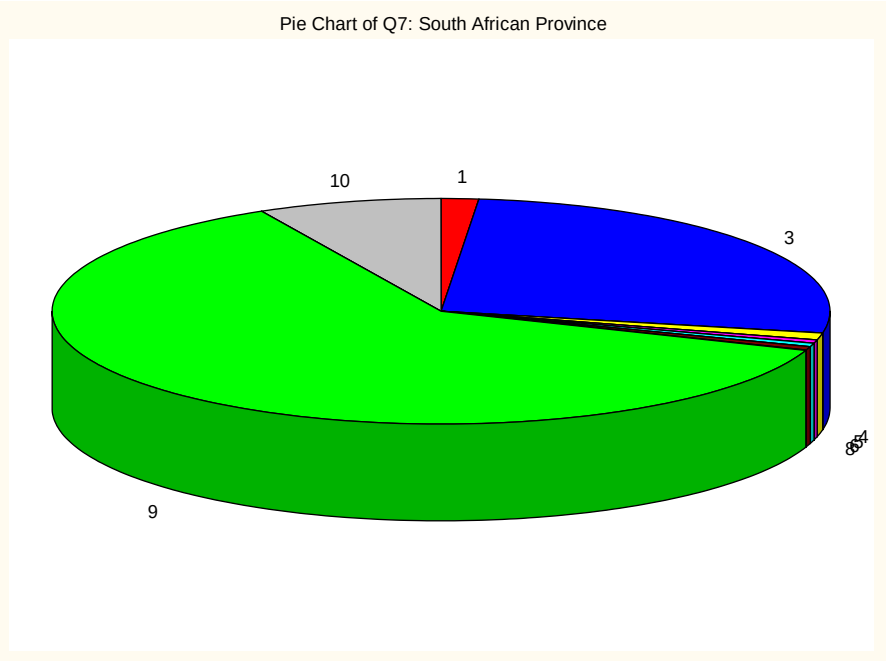


Id	Industry	Count	%
1	Advertising	1	0.51%
2	Agriculture	2	1.03%
3	Automotive	1	0.51%
4	Banking	11	5.64%
6	Education	14	7.18%
7	Entertainment & Leisure	1	0.51%
8	Financial Services	18	9.23%
9	Food, Beverage & Tobacco	3	1.54%
10	Information Technology	92	47.18%
11	Legal	2	1.03%
12	Manufacturing	1	0.51%
13	Publishing	2	1.03%
15	Retail & Wholesale	4	2.05%
16	Service	6	3.08%
18	Telecommunications	6	3.08%
19	Transportation	2	1.03%
20	Other (please specify)	29	14.87%

Industry: Other	**Count**
Architecture	1
Building Supplies	1
Civil Engineering	3
Construction	2
Defence Force	1
Eventing and Design	1
Freelance Photography	1
Hospitality	2
Local Government	1
Market Research	1
Medical Aid	1
NGO	1
Petrochemical	1
Printing	2
Renewable Energy	1
Retired	2
Tool Industry	1
Not Working / Student	4
Unspecified	2

Q7 In which South African province do you currently work?

Variable	Descriptive Statistics								
	Valid N	Mean	Median	Mode	Frequency of Mode	Minimum	Maximum	Variance	Std.Dev.
Q7	196	7.270408	9.000000	9.000000	121	1.000000	10.00000	8.044453	2.836275



Id	Province	Count	%
1	Eastern Cape	3	1.53%
3	Gauteng	52	26.53%
4	KwaZulu-Natal	2	1.02%
5	Limpopo	1	0.51%
6	Mpumalanga	1	0.51%
8	North West	1	0.51%
9	Western Cape	121	61.73%
10	I am currently working outside of South Africa	15	7.65%

Q8 In which country are you currently working?

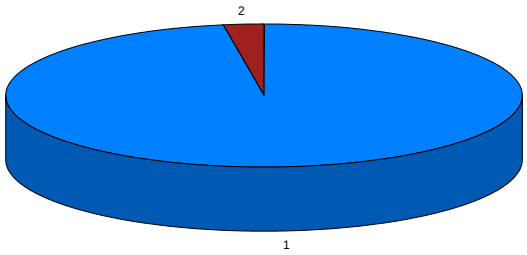
Id	Country	Count
14	Australia	4
15	Austria	1
76	France	1
83	Germany	1
106	Ireland	2
109	Italy	1
205	Spain	1
212	Sweden	1
224	Trinidad and Tobago	1
233	United Kingdom	2

SECTION B: MUSIC CONSUMPTION

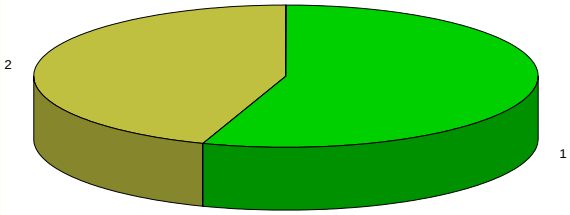
Q9 Have you ever bought a physical CD?
Q14 Have you ever bought a digital music album?
Q19 Have you ever downloaded a digital music album by means of a peer-to-peer network service?

Variable	Descriptive Statistics								
	Valid N	Mean	Median	Mode	Frequency of Mode	Minimum	Maximum	Variance	Std.Dev.
Q9: CD	197	1.025381	1.000000	1.000000	192	1.000000	2.000000	0.024863	0.157679
Q14: Digital Albums	197	1.446701	1.000000	1.000000	109	1.000000	2.000000	0.248420	0.498418
Q19: P2P	197	1.314721	1.000000	1.000000	135	1.000000	2.000000	0.216772	0.465588

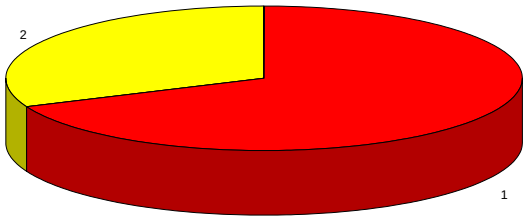
Pie Chart of Q9: CD Purchases



Pie Chart of Q14: Digital Album Purchases



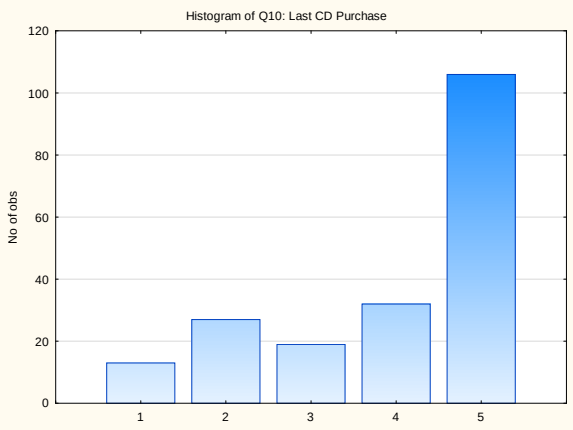
Pie Chart of Q19: P2P Usage



Id	Value	Count	%
Q9: CDs			
1	Yes	192	97.46%
2	No	5	2.54%
Q14: Digital Albums			
1	Yes	109	55.33%
2	No	88	44.67%
Q19: Peer-to-Peer (P2P) Services			
1	Yes	135	68.53%
2	No	62	31.47%

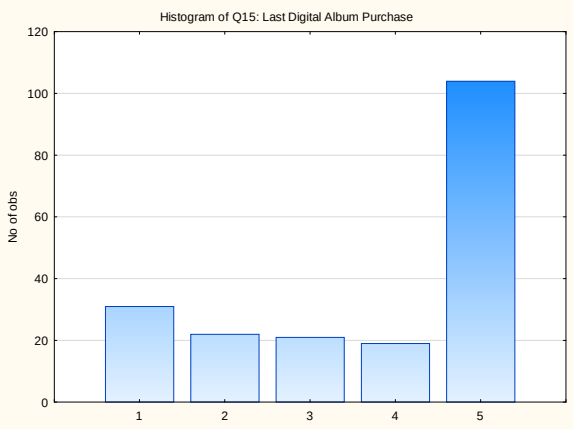
Q10 **How long ago was your last physical CD purchase?**
Q15 **How long ago was your last digital music album purchase?**
Q20 **How long ago did you last download a digital music album by means of a peer-to-peer network service?**

Variable	Descriptive Statistics								
	Valid N	Mean	Median	Mode	Frequency of Mode	Minimum	Maximum	Variance	Std.Dev.
Q10	197	3.969543	5.000000	5.000000	106	1.000000	5.000000	1.784782	1.335957
Q15	197	3.725888	5.000000	5.000000	104	1.000000	5.000000	2.434684	1.560347
Q20	197	3.426396	4.000000	5.000000	91	1.000000	5.000000	2.858075	1.690584



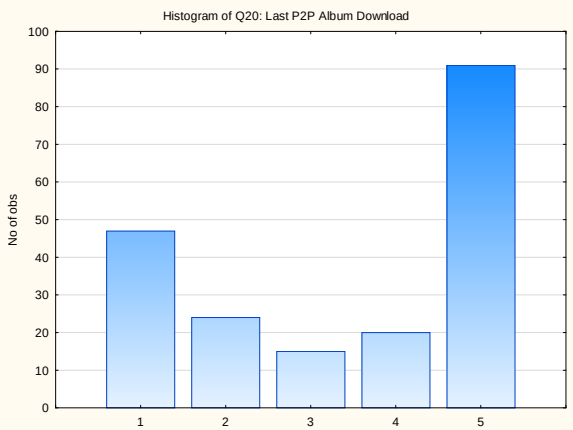
Q10: Last CD Purchase

Id	Value	Count	%
1	In the last month	13	6.60%
2	In the last 3 months	27	13.71%
3	In the last 6 months	19	9.64%
4	In the last year	32	16.24%
5	More than 1 year	106	53.81%



Q15: Last Digital Album Purchase

Id	Value	Count	%
1	In the last month	31	15.74%
2	In the last 3 months	22	11.17%
3	In the last 6 months	21	10.66%
4	In the last year	19	9.64%
5	More than 1 year	104	52.79%

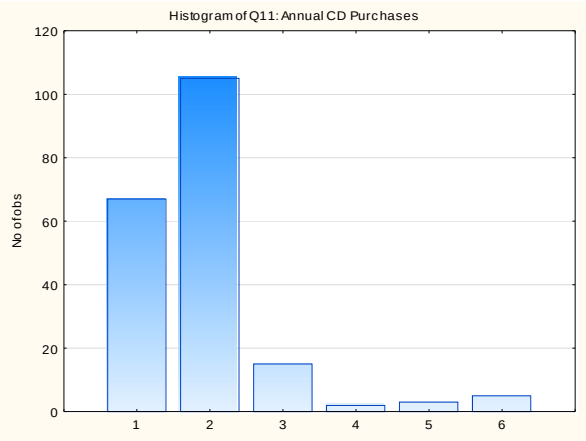


Q20: Last P2P Album Download

Id	Value	Count	%
1	In the last month	47	23.86%
2	In the last 3 months	24	12.18%
3	In the last 6 months	15	7.61%
4	In the last year	20	10.15%
5	More than 1 year	91	46.19%

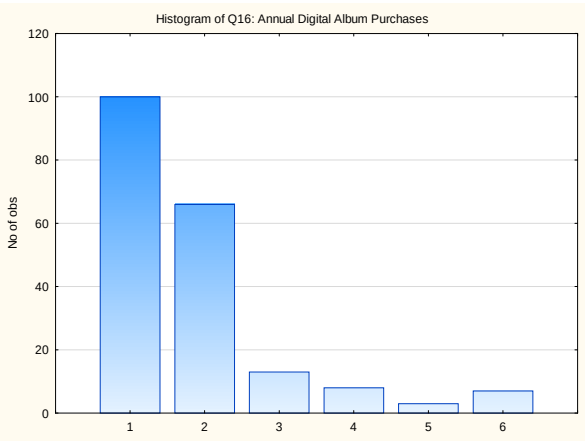
Q11 **How many physical CDs do you usually purchase per year?**
Q16 **How many digital music albums do you usually purchase per year?**
Q21 **How many digital music albums do you usually download by means of a peer-to-peer network service in a year?**

Variable	Descriptive Statistics								
	Valid N	Mean	Median	Mode	Frequency of Mode	Minimum	Maximum	Variance	Std.Dev.
Q11	197	1.903553	2.000000	2.000000	105	1.000000	6.000000	0.995753	0.997874
Q16	197	1.827411	1.000000	1.000000	100	1.000000	6.000000	1.419041	1.191235
Q21	197	2.497462	2.000000	1.000000	78	1.000000	6.000000	3.149228	1.774606



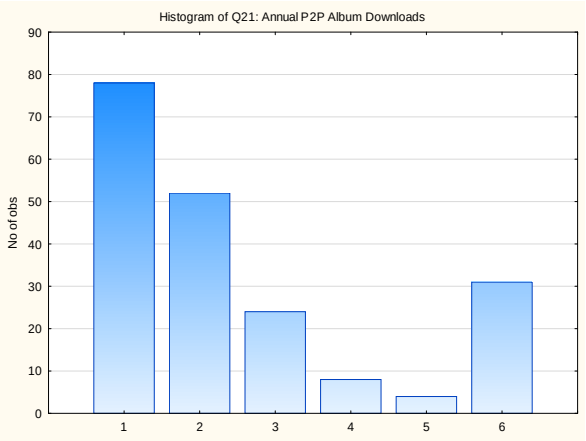
Q11: Annual CD Purchases

Id	Value	Count	%
1	None	67	34.01%
2	1-5	105	53.30%
3	6-10	15	7.61%
4	11-15	2	1.02%
5	16-20	3	1.52%
6	20+	5	2.54%



Q16: Annual Digital Album Purchases

Id	Value	Count	%
1	None	100	50.76%
2	1-5	66	33.50%
3	6-10	13	6.60%
4	11-15	8	4.06%
5	16-20	3	1.52%
6	20+	7	3.55%

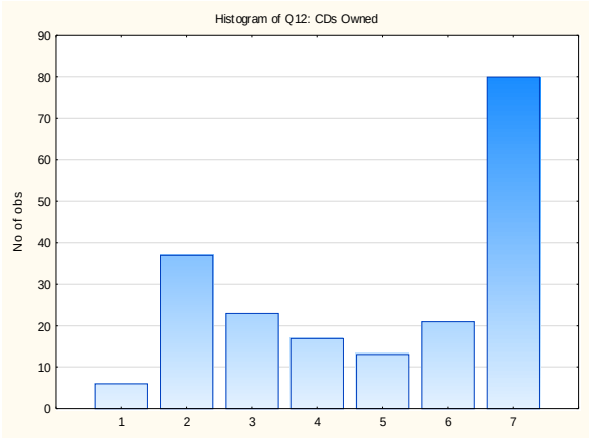


Q21: Annual P2P Album Downloads

Id	Value	Count	%
1	None	78	39.59%
2	1-5	52	26.40%
3	6-10	24	12.18%
4	11-15	8	4.06%
5	16-20	4	2.03%
6	20+	31	15.74%

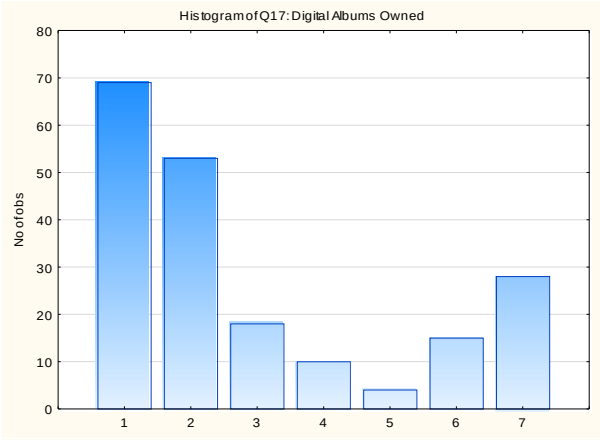
Q12 **Approximately how many physical CDs do you own?**
Q17 **Approximately how many digital music albums do you own?**
Q22 **Approximately how many digital music albums have you downloaded by means of a peer-to-peer network service?**

Variable	Descriptive Statistics								
	Valid N	Mean	Median	Mode	Frequency of Mode	Minimum	Maximum	Variance	Std.Dev.
Q12	197	4.913706	6.000000	7.000000	80	1.000000	7.000000	4.477209	2.115942
Q17	197	2.918782	2.000000	1.000000	69	1.000000	7.000000	4.779084	2.186112
Q22	197	3.416244	2.000000	1.000000	65	1.000000	7.000000	5.540143	2.353751



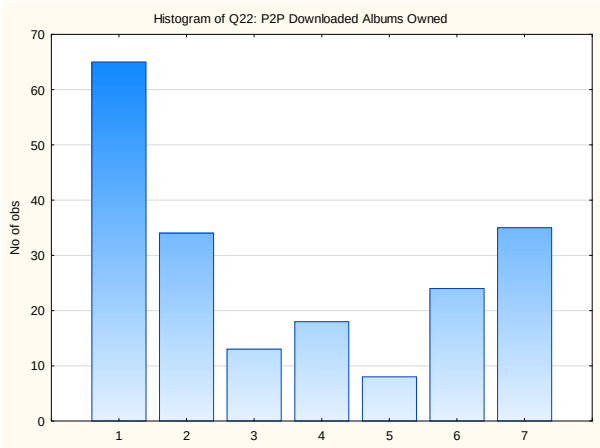
Q12: CDs Owned

Id	Value	Count	%
1	None	6	3.05%
2	1-10	37	18.78%
3	11-20	23	11.68%
4	21-30	17	8.63%
5	31-40	13	6.60%
6	41-50	21	10.66%
7	50+	80	40.61%



Q17: Digital Albums Owned

Id	Value	Count	%
1	None	69	35.03%
2	1-10	53	26.90%
3	11-20	18	9.14%
4	21-30	10	5.08%
5	31-40	4	2.03%
6	41-50	15	7.61%
7	50+	28	14.21%

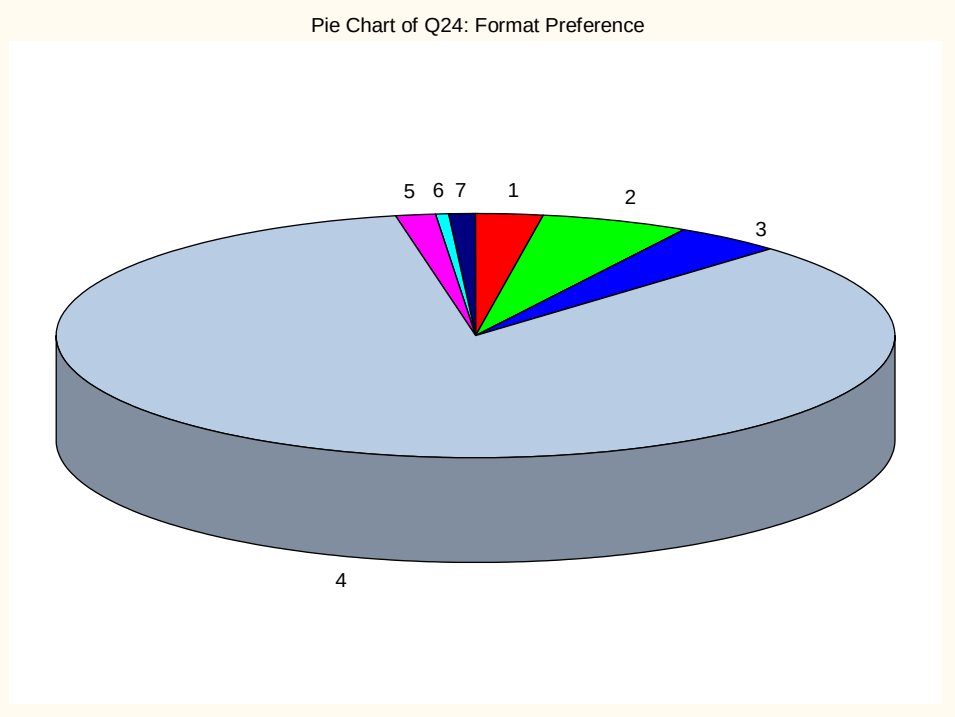


Q22: P2P Downloaded Albums Owned

Id	Value	Count	%
1	None	65	32.99%
2	1-10	34	17.26%
3	11-20	13	6.60%
4	21-30	18	9.14%
5	31-40	8	4.06%
6	41-50	24	12.18%
7	50+	35	17.77%

Q24 What is your preferred digital music format?

Variable	Descriptive Statistics								
	Valid N	Mean	Median	Mode	Frequency of Mode	Minimum	Maximum	Variance	Std.Dev.
Q24	194	3.824742	4.000000	4.000000	164	1.000000	7.00000	0.601250	0.775403



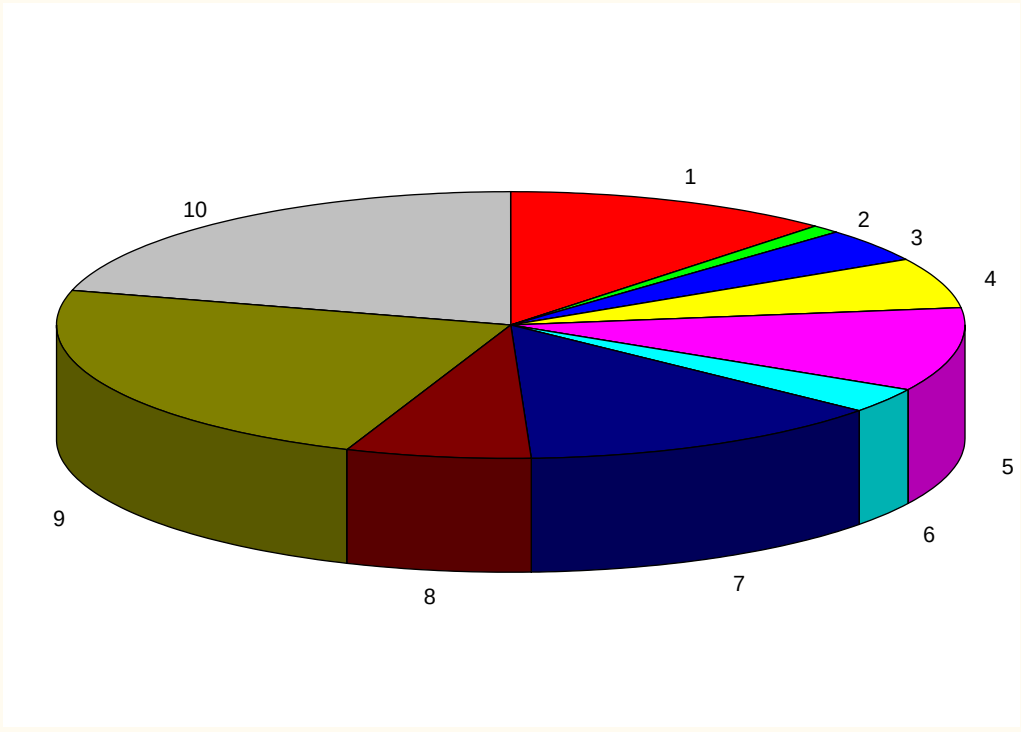
	Id	Value	Count	%
Q24	1	AAC	5	2.58%
Q24	2	FLAC	11	5.67%
Q24	3	M4A	8	4.12%
Q24	4	MP3	164	84.54%
Q24	5	WAV	3	1.55%
Q24	6	WMA	1	0.52%
Q24	7	Other	2	1.03%

Other:
OGG

Q25 What is your preferred style of music?

Variable	Descriptive Statistics								
	Valid N	Mean	Median	Mode	Frequency of Mode	Minimum	Maximum	Variance	Std.Dev.
Q25	197	6.827411	8.000000	9.000000	46	1.000000	10.00000	8.980265	2.996709

Pie Chart of Q25: Genre Preference



Id	Genre	Count	%
1	Alternative	23	11.68%
2	Blues	2	1.02%
3	Classical	8	4.06%
4	Electronic	12	6.09%
5	Heavy Metal	20	10.15%
6	Jazz	6	3.05%
7	Pop	26	13.20%
8	R & B	13	6.60%
9	Rock	46	23.35%
10	Other	41	20.81%

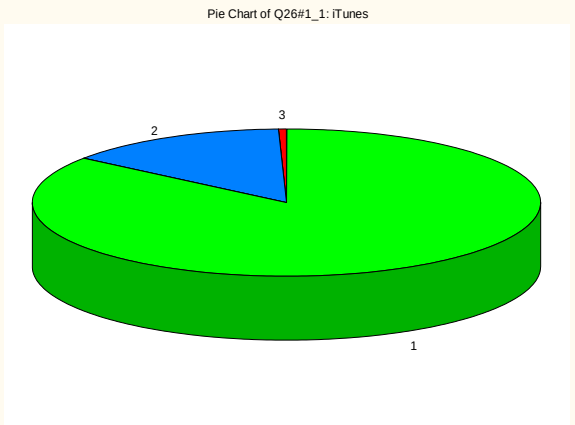
Genre: Other	Count
Mix of Styles	16
Hip Hop	3
House	3
Indian	3
Afrikaans	2

Dance	2
Indie	2
Trance	2
Country	1
Gospel	1
Post Hardcore	1
Post-Rock, Sludge Metal, Classic 90's Screamo	1
Progressive Rock	1
Top 10	1
World	1

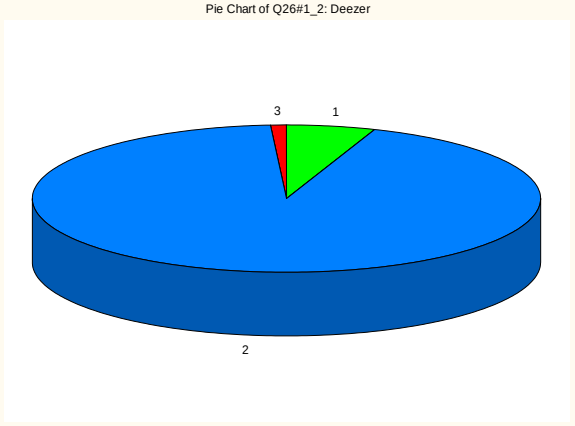
SECTION C: DIGITAL MUSIC SERVICES

Q26 Are any of these services available to users in South Africa?

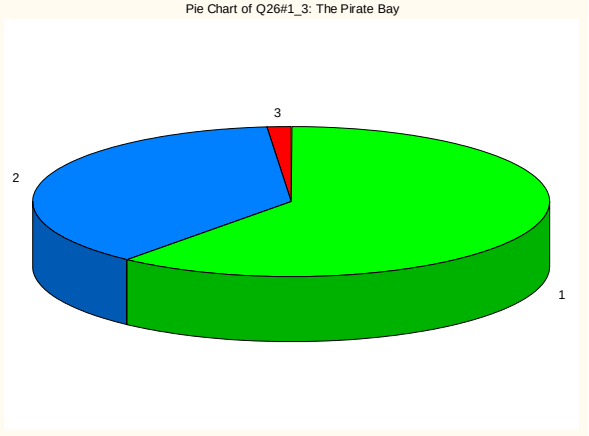
Variable	Descriptive Statistics								
	Valid N	Mean	Median	Mode	Frequency of Mode	Minimum	Maximum	Variance	Std.Dev.
Q26#1_1	197	1.152284	1.000000	1.000000	168	1.000000	3.000000	0.139956	0.374108
Q26#1_2	196	1.954082	2.000000	2.000000	183	1.000000	3.000000	0.064547	0.254062
Q26#1_3	197	1.406091	1.000000	1.000000	120	1.000000	3.000000	0.273024	0.522517
Q26#1_4	197	1.065990	1.000000	1.000000	184	1.000000	2.000000	0.061950	0.248897



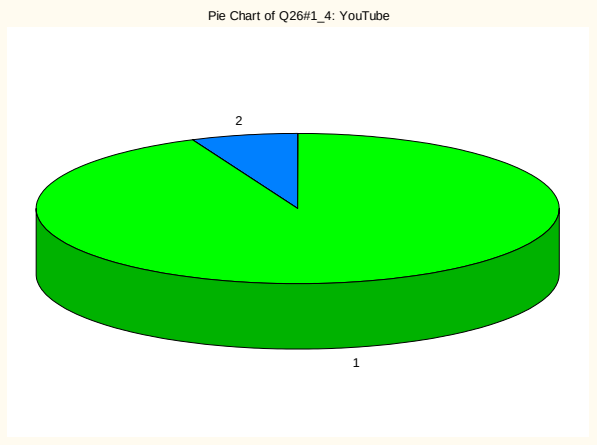
Q26#1_1: iTunes			
Id	**Value**	**Count**	**%**
1	Yes	168	85.28%
2	Don't Know	28	14.21%
3	No	1	0.51%



Q26#1_2: Deezer			
Id	**Value**	**Count**	**%**
1	Yes	11	5.61%
2	Don't Know	183	93.37%
3	No	2	1.02%



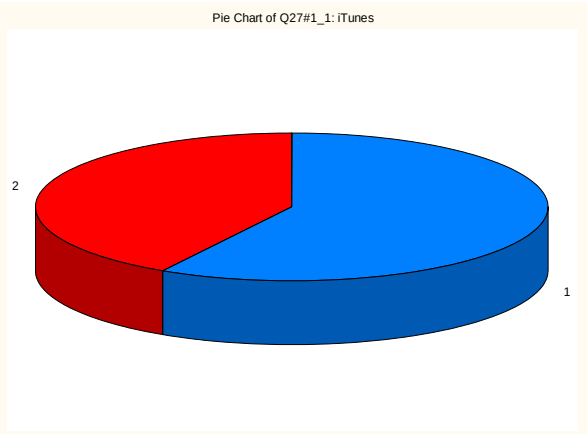
Q26#1_3: The Pirate Bay			
Id	**Value**	**Count**	**%**
1	Yes	120	60.91%
2	Don't Know	74	37.56%
3	No	3	1.52%



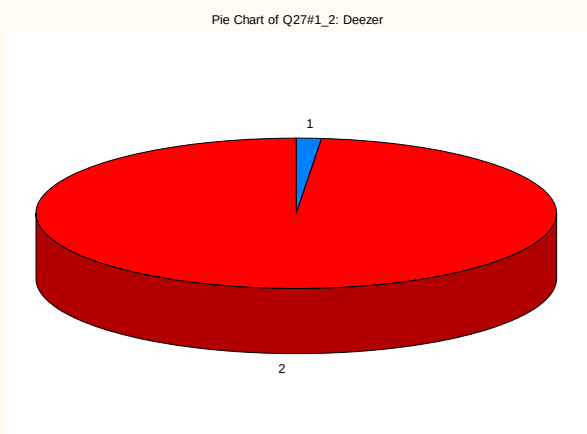
Q26#1_4: YouTube			
Id	**Value**	**Count**	**%**
1	Yes	184	93.40%
2	Don't Know	13	6.60%
3	No	0	0.00%

Q27 Have you made use of any of these services to download or listen to digital music?

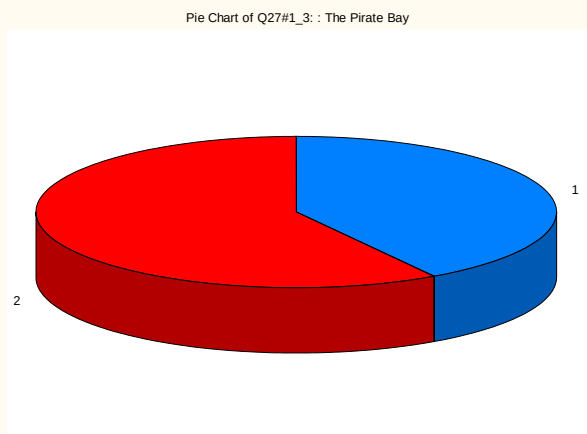
Variable	Descriptive Statistics								
	Valid N	Mean	Median	Mode	Frequency of Mode	Minimum	Maximum	Variance	Std.Dev.
Q27#1_1	197	1.416244	1.000000	1.000000	115	1.000000	2.000000	0.244225	0.494191
Q27#1_2	196	1.984694	2.000000	2.000000	193	1.000000	2.000000	0.015149	0.123082
Q27#1_3	197	1.588832	2.000000	2.000000	116	1.000000	2.000000	0.243344	0.493299
Q27#1_4	197	1.157360	1.000000	1.000000	166	1.000000	2.000000	0.133275	0.365068



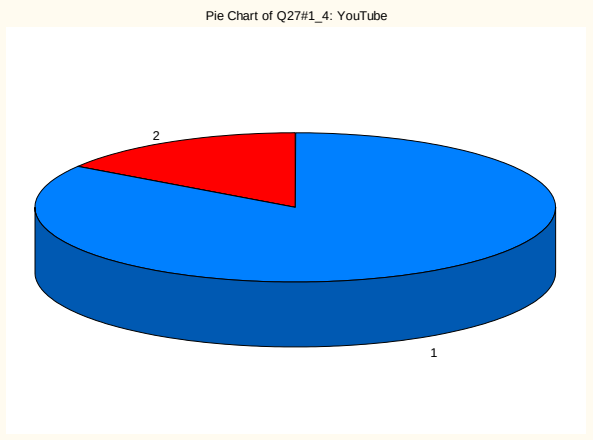
Q27#1_1: iTunes			
Id	**Value**	**Count**	**%**
1	Yes	115	58.38%
2	No	82	41.62%



Q27#1_2: Deezer			
Id	**Value**	**Count**	**%**
1	Yes	3	1.53%
2	No	193	98.47%



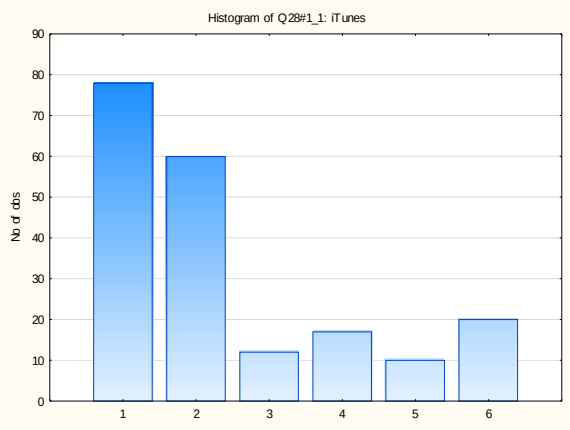
Q27#1_3: The Pirate Bay			
Id	**Value**	**Count**	**%**
1	Yes	81	41.12%
2	No	116	58.88%



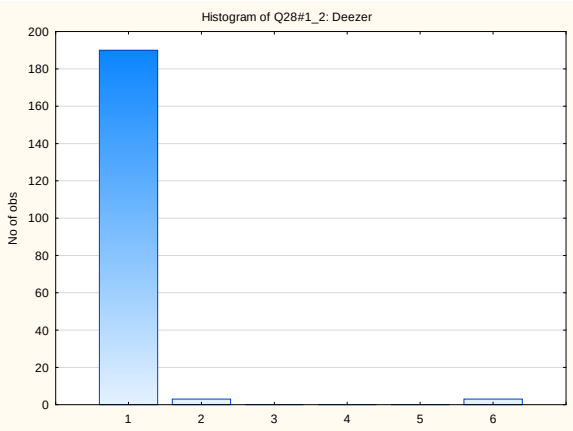
Q27#1_4: YouTube			
Id	**Value**	**Count**	**%**
1	Yes	166	84.26%
2	No	31	15.74%

Q28 How long ago did you last make use of any of these services to download or listen to digital music?

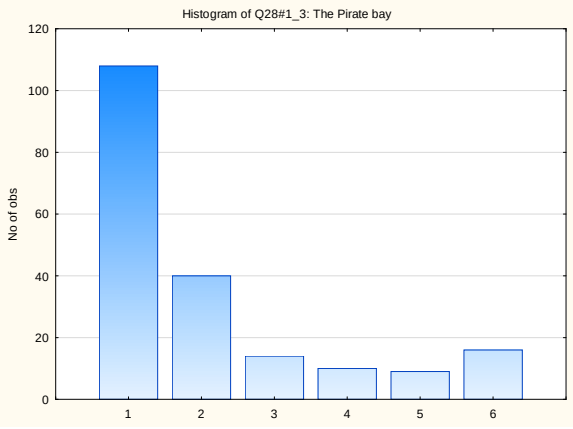
Variable	Descriptive Statistics								
	Valid N	Mean	Median	Mode	Frequency of Mode	Minimum	Maximum	Variance	Std.Dev.
Q28#1_1	197	2.395939	2.000000	1.000000	78	1.000000	6.000000	2.740392	1.655413
Q28#1_2	196	1.091837	1.000000	1.000000	190	1.000000	6.000000	0.391523	0.625718
Q28#1_3	197	2.086294	1.000000	1.000000	108	1.000000	6.000000	2.538434	1.593246
Q28#1_4	197	2.197970	2.000000	2.000000	133	1.000000	6.000000	0.843261	0.918293



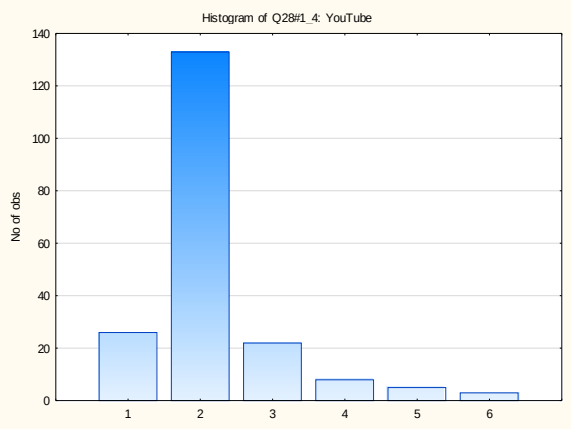
Q28#1_1: iTunes			
Id	**Value**	**Count**	**%**
1	Never	78	39.59%
2	In the last month	60	30.46%
3	In the last 3 months	12	6.09%
4	In the last 6 months	17	8.63%
5	In the last year	10	5.08%
6	More than 1 year	20	10.15%



Q28#1_2: Deezer			
Id	**Value**	**Count**	**%**
1	Never	190	96.94%
2	In the last month	3	1.53%
3	In the last 3 months	0	0.00%
4	In the last 6 months	0	0.00%
5	In the last year	0	0.00%
6	More than 1 year	3	1.53%



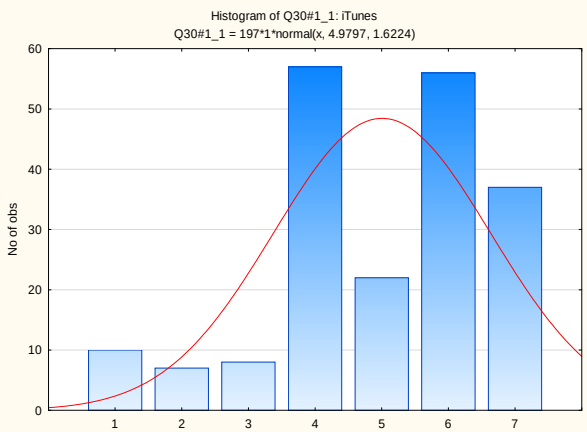
Q28#1_3: The Pirate Bay			
Id	**Value**	**Count**	**%**
1	Never	108	54.82%
2	In the last month	40	20.30%
3	In the last 3 months	14	7.11%
4	In the last 6 months	10	5.08%
5	In the last year	9	4.57%
6	More than 1 year	16	8.12%



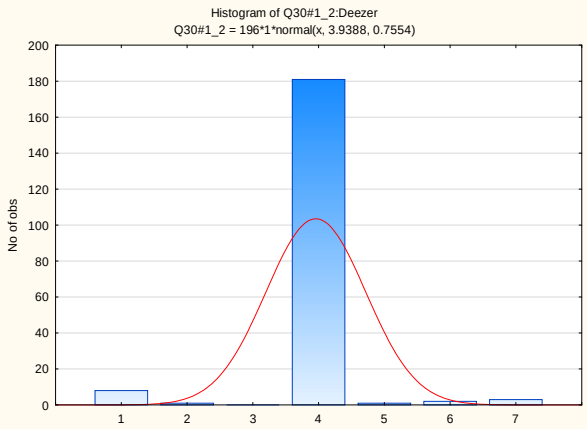
Q28#1_4: YouTube			
Id	**Value**	**Count**	**%**
1	Never	26	13.20%
2	In the last month	133	67.51%
3	In the last 3 months	22	11.17%
4	In the last 6 months	8	4.06%
5	In the last year	5	2.54%
6	More than 1 year	3	1.52%

Q30_1 I believe that iTunes provides users with a convenient service.
Q30_2 I believe that Deezer provides users with a convenient service.
Q30_3 I believe that The Pirate Bay provides users with a convenient service.
Q30_4 I believe that YouTube provides users with a convenient service.

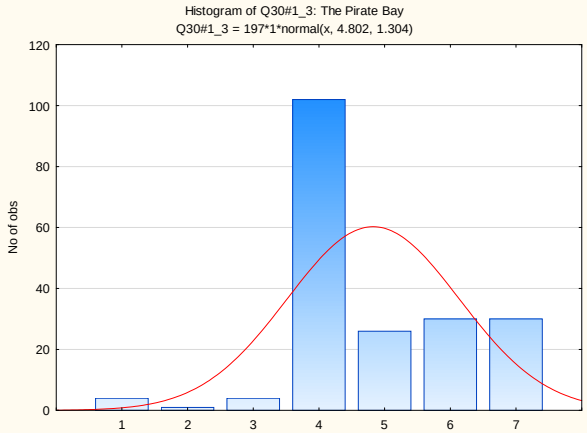
Variable	Descriptive Statistics								
	Valid N	Mean	Median	Mode	Frequency of Mode	Minimum	Maximum	Variance	Std.Dev.
Q30#1_1	197	4.979695	5.000000	4.000000	57	1.000000	7.000000	2.632239	1.622418
Q30#1_2	196	3.938776	4.000000	4.000000	181	1.000000	7.000000	0.570591	0.755375
Q30#1_3	197	4.802030	4.000000	4.000000	102	1.000000	7.000000	1.700404	1.303995
Q30#1_4	197	5.893401	6.000000	7.000000	77	2.000000	7.000000	1.514089	1.230483



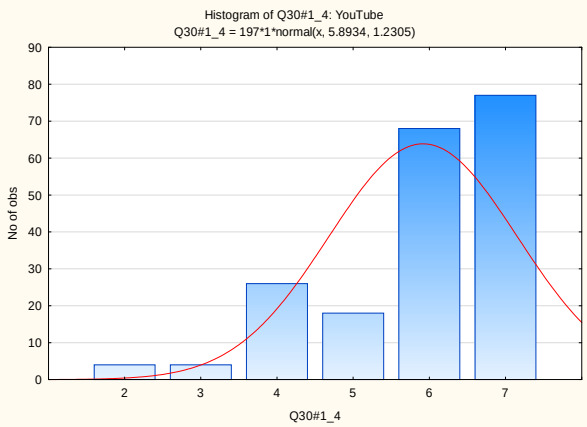
Q30#1_1: iTunes			
Id	**Value**	**Count**	**%**
1	Strongly Disagree	10	5.08%
2	Disagree	7	3.55%
3	Somewhat Disagree	8	4.06%
4	Neutral	57	28.93%
5	Somewhat Agree	22	11.17%
6	Agree	56	28.43%
7	Strongly Agree	37	18.78%



Q30#1_2: Deezer			
Id	**Value**	**Count**	**%**
1	Strongly Disagree	8	4.08%
2	Disagree	1	0.51%
3	Somewhat Disagree	0	0.00%
4	Neutral	181	92.35%
5	Somewhat Agree	1	0.51%
6	Agree	2	1.02%
7	Strongly Agree	3	1.53%



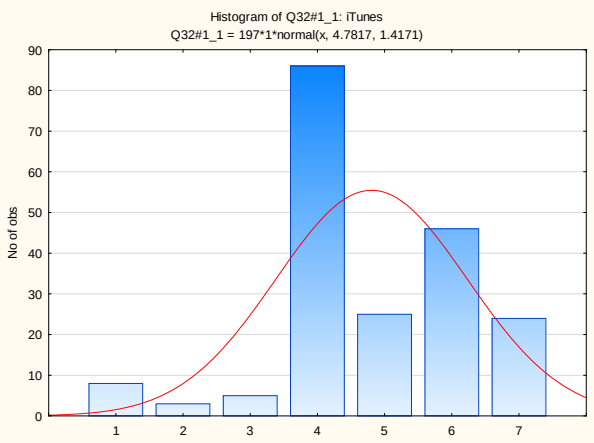
Q30#1_3: The Pirate Bay			
Id	**Value**	**Count**	**%**
1	Strongly Disagree	4	2.03%
2	Disagree	1	0.51%
3	Somewhat Disagree	4	2.03%
4	Neutral	102	51.78%
5	Somewhat Agree	26	13.20%
6	Agree	30	15.23%
7	Strongly Agree	30	15.23%



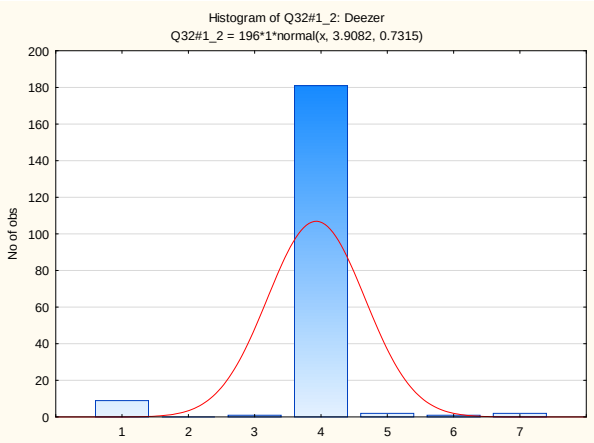
Q30#1_4: YouTube			
Id	**Value**	**Count**	**%**
1	Strongly Disagree	0	0.00%
2	Disagree	4	2.03%
3	Somewhat Disagree	4	2.03%
4	Neutral	26	13.20%
5	Somewhat Agree	18	9.14%
6	Agree	68	34.52%
7	Strongly Agree	77	39.09%

Q32_1 I am usually able to find the music that I am looking for when using iTunes.
Q32_2 I am usually able to find the music that I am looking for when using Deezer.
Q32_3 I am usually able to find the music that I am looking for when using The Pirate Bay.
Q32_4 I am usually able to find the music that I am looking for when using YouTube.

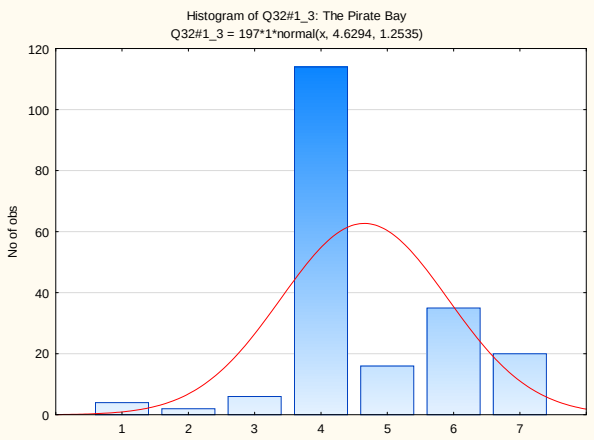
Variable	Descriptive Statistics								
	Valid N	Mean	Median	Mode	Frequency of Mode	Minimum	Maximum	Variance	Std.Dev.
Q32#1_1	197	4.781726	4.000000	4.000000	86	1.000000	7.000000	2.008236	1.417122
Q32#1_2	196	3.908163	4.000000	4.000000	181	1.000000	7.000000	0.535113	0.731514
Q32#1_3	197	4.629442	4.000000	4.000000	114	1.000000	7.000000	1.571170	1.253463
Q32#1_4	197	5.923858	6.000000	7.000000	85	1.000000	7.000000	1.570703	1.253277



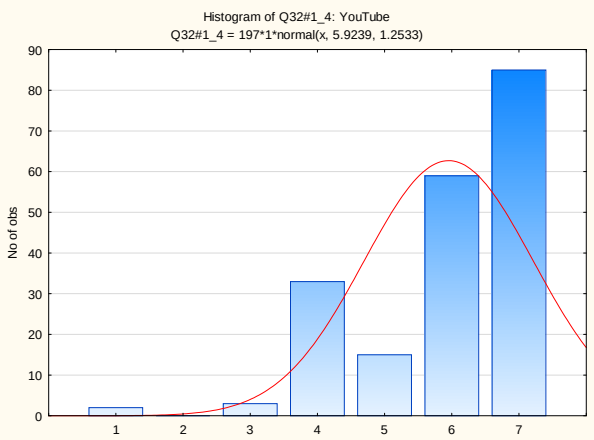
Q32#1_1: iTunes			
Id	**Value**	**Count**	**%**
1	Strongly Disagree	8	4.06%
2	Disagree	3	1.52%
3	Somewhat Disagree	5	2.54%
4	Neutral	86	43.65%
5	Somewhat Agree	25	12.69%
6	Agree	46	23.35%
7	Strongly Agree	24	12.18%



Q32#1_2: Deezer			
Id	**Value**	**Count**	**%**
1	Strongly Disagree	9	4.59%
2	Disagree	0	0.00%
3	Somewhat Disagree	1	0.51%
4	Neutral	181	92.35%
5	Somewhat Agree	2	1.02%
6	Agree	1	0.51%
7	Strongly Agree	2	1.02%



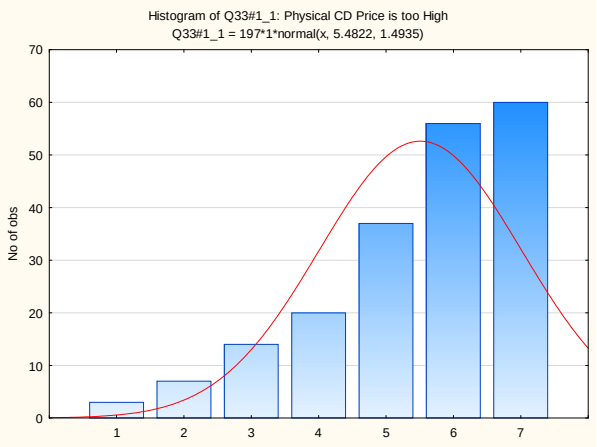
Q32#1_3: The Pirate Bay			
Id	**Value**	**Count**	**%**
1	Strongly Disagree	4	2.03%
2	Disagree	2	1.02%
3	Somewhat Disagree	6	3.05%
4	Neutral	114	57.87%
5	Somewhat Agree	16	8.12%
6	Agree	35	17.77%
7	Strongly Agree	20	10.15%



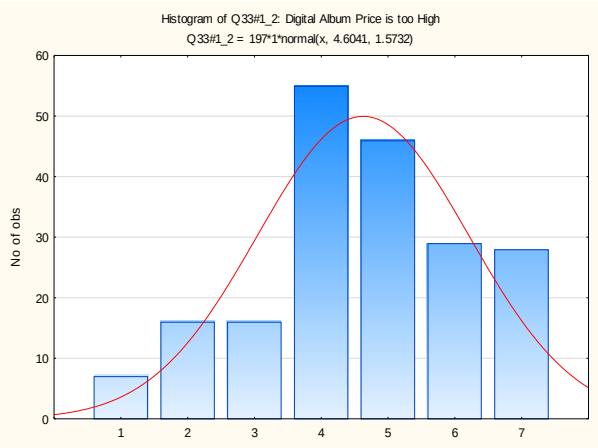
Q32#1_4: YouTube			
Id	**Value**	**Count**	**%**
1	Strongly Disagree	2	1.02%
2	Disagree	0	0.00%
3	Somewhat Disagree	3	1.52%
4	Neutral	33	16.75%
5	Somewhat Agree	15	7.61%
6	Agree	59	29.95%
7	Strongly Agree	85	43.15%

Q33_1 I believe that the price of a physical CD is too high.
Q33_2 I believe that the price of a digital music album is too high.
Q33_3 I believe that digital music albums are overpriced.
Q33_4 I believe that a digital music album is well priced compared to the price of its equivalent physical CD.
Q33_5 I could save money by downloading "pirated" music from the internet.

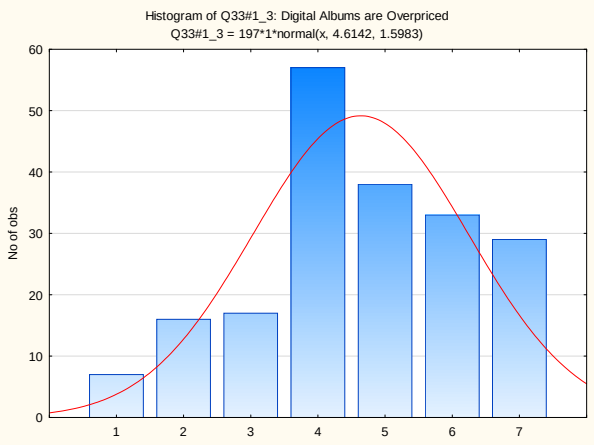
Variable	Descriptive Statistics								
	Valid N	Mean	Median	Mode	Frequency of Mode	Minimum	Maximum	Variance	Std.Dev.
Q33#1_1	197	5.482234	6.000000	7.000000	60	1.000000	7.000000	2.230550	1.493503
Q33#1_2	197	4.604061	5.000000	4.000000	55	1.000000	7.000000	2.475085	1.573240
Q33#1_3	197	4.614213	5.000000	4.000000	57	1.000000	7.000000	2.554491	1.598277
Q33#1_4	197	4.431472	4.000000	4.000000	57	1.000000	7.000000	2.369004	1.539157
Q33#1_5	197	5.355330	6.000000	7.000000	69	1.000000	7.000000	3.117994	1.765784



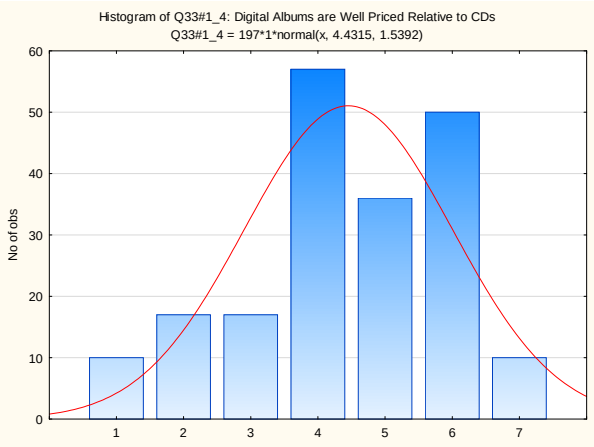
Q33#1_1: Physical CD Price is too High			
Id	**Value**	**Count**	**%**
1	Strongly Disagree	3	1.52%
2	Disagree	7	3.55%
3	Somewhat Disagree	14	7.11%
4	Neutral	20	10.15%
5	Somewhat Agree	37	18.78%
6	Agree	56	28.43%
7	Strongly Agree	60	30.46%



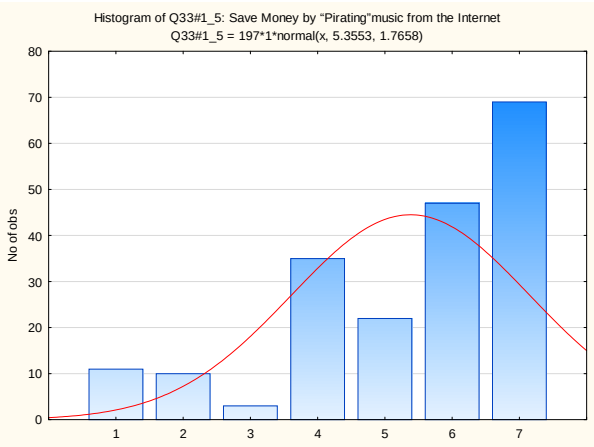
Q33#1_2: Digital Album Price is Too High			
Id	**Value**	**Count**	**%**
1	Strongly Disagree	7	3.55%
2	Disagree	16	8.12%
3	Somewhat Disagree	16	8.12%
4	Neutral	55	27.92%
5	Somewhat Agree	46	23.35%
6	Agree	29	14.72%
7	Strongly Agree	28	14.21%



Q33#1_3: Digital Albums are Overpriced			
Id	**Value**	**Count**	**%**
1	Strongly Disagree	7	3.55%
2	Disagree	16	8.12%
3	Somewhat Disagree	17	8.63%
4	Neutral	57	28.93%
5	Somewhat Agree	38	19.29%
6	Agree	33	16.75%
7	Strongly Agree	29	14.72%



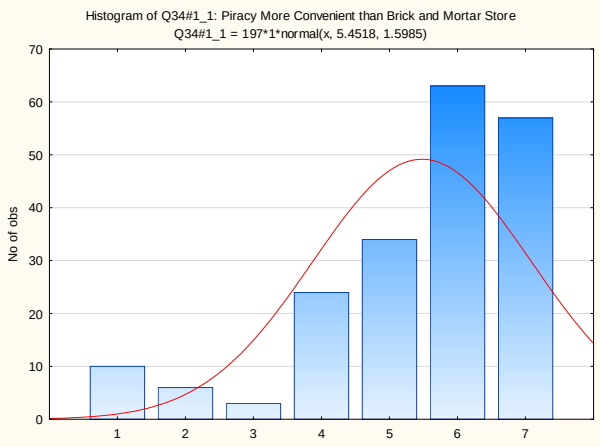
Q33#1_4: Digital Albums are Well Priced Relative to CDs			
Id	**Value**	**Count**	**%**
1	Strongly Disagree	10	5.08%
2	Disagree	17	8.63%
3	Somewhat Disagree	17	8.63%
4	Neutral	57	28.93%
5	Somewhat Agree	36	18.27%
6	Agree	50	25.38%
7	Strongly Agree	10	5.08%



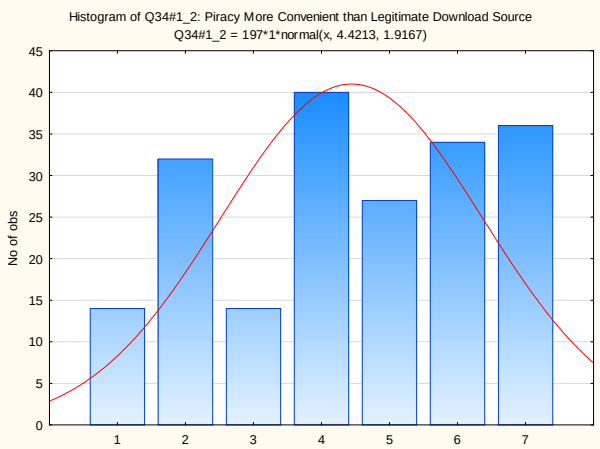
Q33#1_5: Can Save Money by “Pirating”music from the Internet			
Id	**Value**	**Count**	**%**
1	Strongly Disagree	11	5.58%
2	Disagree	10	5.08%
3	Somewhat Disagree	3	1.52%
4	Neutral	35	17.77%
5	Somewhat Agree	22	11.17%
6	Agree	47	23.86%
7	Strongly Agree	69	35.03%

Q34_1 It is more convenient to download a "pirated" copy of a music album from the internet than it is to purchase a physical CD from a brick-and-mortar store.
Q34_2 It is more convenient to download a "pirated" copy of a music album from the internet than it is to make use of a legitimate download service such as iTunes.

Variable	Descriptive Statistics								
	Valid N	Mean	Median	Mode	Frequency of Mode	Minimum	Maximum	Variance	Std.Dev.
Q34#1_1	197	5.451777	6.000000	6.000000	63	1.000000	7.000000	2.555061	1.598456
Q34#1_2	197	4.421320	4.000000	4.000000	40	1.000000	7.000000	3.673625	1.916670



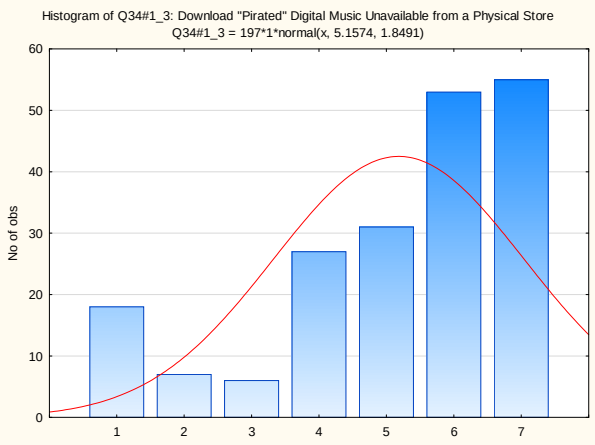
Q34#1_1: Piracy More Convenient than Brick and Mortar Store			
Id	**Value**	**Count**	**%**
1	Strongly Disagree	10	5.08%
2	Disagree	6	3.05%
3	Somewhat Disagree	3	1.52%
4	Neutral	24	12.18%
5	Somewhat Agree	34	17.26%
6	Agree	63	31.98%
7	Strongly Agree	57	28.93%



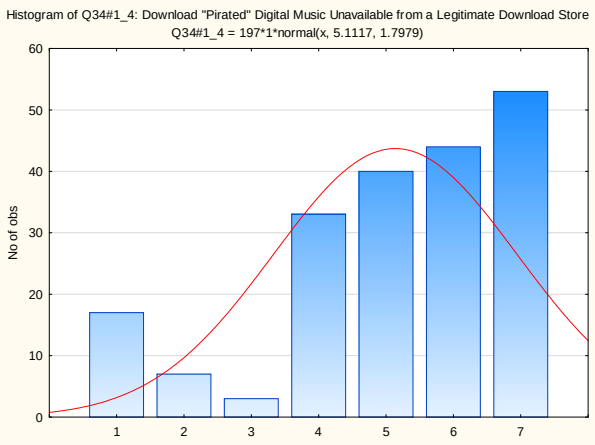
Q34#1_2: Piracy More Convenient than Legitimate Download Source			
Id	**Value**	**Count**	**%**
1	Strongly Disagree	14	7.11%
2	Disagree	32	16.24%
3	Somewhat Disagree	14	7.11%
4	Neutral	40	20.30%
5	Somewhat Agree	27	13.71%
6	Agree	34	17.26%
7	Strongly Agree	36	18.27%

Q34_3 I would download a "pirated" copy of a digital music album which is unavailable from a physical store.
Q34_4 I would download a "pirated" copy of a digital music album which is unavailable from a legitimate download service such as iTunes.
Q34_5 I would download a "pirated" copy of a digital music album before checking whether it is available from a legitimate download service such as iTunes.

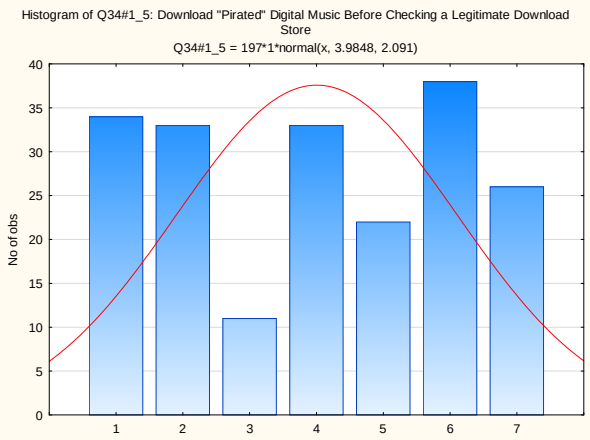
Variable	Descriptive Statistics								
	Valid N	Mean	Median	Mode	Frequency of Mode	Minimum	Maximum	Variance	Std.Dev.
Q34#1_3	197	5.157360	6.000000	7.000000	55	1.000000	7.000000	3.418989	1.849051
Q34#1_4	197	5.111675	5.000000	7.000000	53	1.000000	7.000000	3.232363	1.797877
Q34#1_5	197	3.984772	4.000000	6.000000	38	1.000000	7.000000	4.372216	2.090984



Q34#1_3: Download "Pirated" Digital Music Unavailable from a Physical Store			
Id	**Value**	**Count**	**%**
1	Strongly Disagree	18	9.14%
2	Disagree	7	3.55%
3	Somewhat Disagree	6	3.05%
4	Neutral	27	13.71%
5	Somewhat Agree	31	15.74%
6	Agree	53	26.90%
7	Strongly Agree	55	27.92%



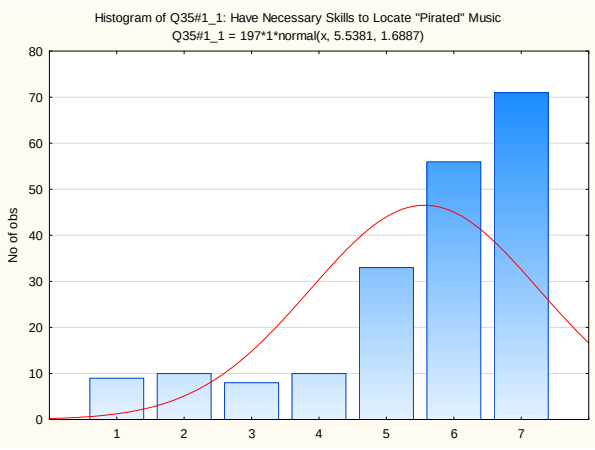
Q34#1_4: Download "Pirated" Digital Music Unavailable from a Legitimate Download Store			
Id	**Value**	**Count**	**%**
1	Strongly Disagree	17	8.63%
2	Disagree	7	3.55%
3	Somewhat Disagree	3	1.52%
4	Neutral	33	16.75%
5	Somewhat Agree	40	20.30%
6	Agree	44	22.34%
7	Strongly Agree	53	26.90%



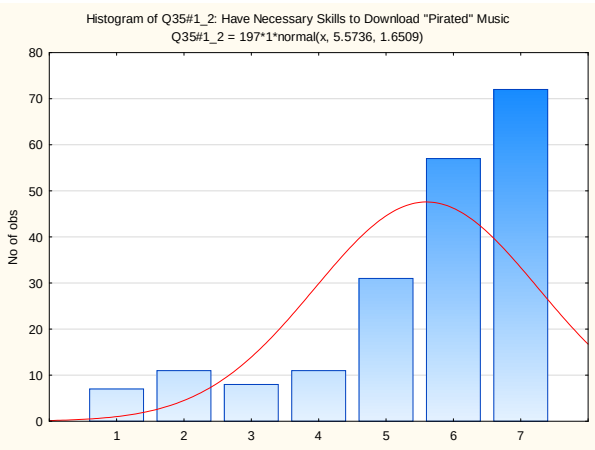
Q34#1_5: Download "Pirated" Digital Music Before Checking a Legitimate Download Store			
Id	**Value**	**Count**	**%**
1	Strongly Disagree	34	17.26%
2	Disagree	33	16.75%
3	Somewhat Disagree	11	5.58%
4	Neutral	33	16.75%
5	Somewhat Agree	22	11.17%
6	Agree	38	19.29%
7	Strongly Agree	26	13.20%

Q35_1 **I believe that I have the necessary skills to locate "pirated" music on the internet.**
Q35_2 **I believe that I have the necessary skills to download "pirated" music from the internet.**
Q35_3 **I believe that I have the necessary resources to download "pirated" music from the internet.**

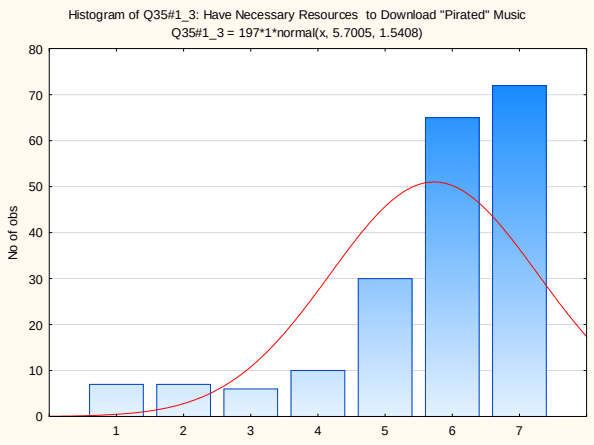
Variable	Descriptive Statistics								
	Valid N	Mean	Median	Mode	Frequency of Mode	Minimum	Maximum	Variance	Std.Dev.
Q35#1_1	197	5.538071	6.000000	7.000000	71	1.000000	7.000000	2.851860	1.688745
Q35#1_2	197	5.573604	6.000000	7.000000	72	1.000000	7.000000	2.725422	1.650885
Q35#1_3	197	5.700508	6.000000	7.000000	72	1.000000	7.000000	2.374132	1.540822



Q35#1_1: Have Necessary Skills to Locate "Pirated" Music			
Id	**Value**	**Count**	**%**
1	Strongly Disagree	9	4.57%
2	Disagree	10	5.08%
3	Somewhat Disagree	8	4.06%
4	Neutral	10	5.08%
5	Somewhat Agree	33	16.75%
6	Agree	56	28.43%
7	Strongly Agree	71	36.04%



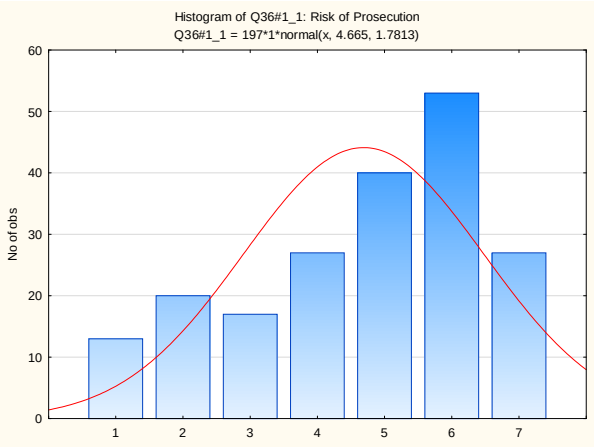
Q35#1_2: Have Necessary Skills to Download "Pirated" Music			
Id	**Value**	**Count**	**%**
1	Strongly Disagree	7	3.55%
2	Disagree	11	5.58%
3	Somewhat Disagree	8	4.06%
4	Neutral	11	5.58%
5	Somewhat Agree	31	15.74%
6	Agree	57	28.93%
7	Strongly Agree	72	36.55%



Q35#1_3: Have Necessary Resources to Download "Pirated" Music			
Id	**Value**	**Count**	**%**
1	Strongly Disagree	7	3.55%
2	Disagree	7	3.55%
3	Somewhat Disagree	6	3.05%
4	Neutral	10	5.08%
5	Somewhat Agree	30	15.23%
6	Agree	65	32.99%
7	Strongly Agree	72	36.55%

Q36_1 If I download "pirated" music from the internet, there is a risk that I may be caught and prosecuted.

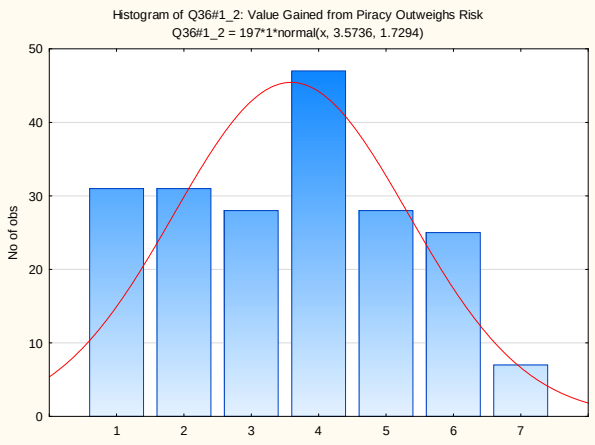
Variable	Descriptive Statistics								
	Valid N	Mean	Median	Mode	Frequency of Mode	Minimum	Maximum	Variance	Std.Dev.
Q36#1_1	197	4.664975	5.000000	6.000000	53	1.000000	7.000000	3.172900	1.781263



Q36#1_1: Risk of Prosecution			
Id	**Value**	**Count**	**%**
1	Strongly Disagree	13	6.60%
2	Disagree	20	10.15%
3	Somewhat Disagree	17	8.63%
4	Neutral	27	13.71%
5	Somewhat Agree	40	20.30%
6	Agree	53	26.90%
7	Strongly Agree	27	13.71%

Q36_2 I believe that the "value" that I would gain from downloading "pirated" music is worth the risk of being caught.

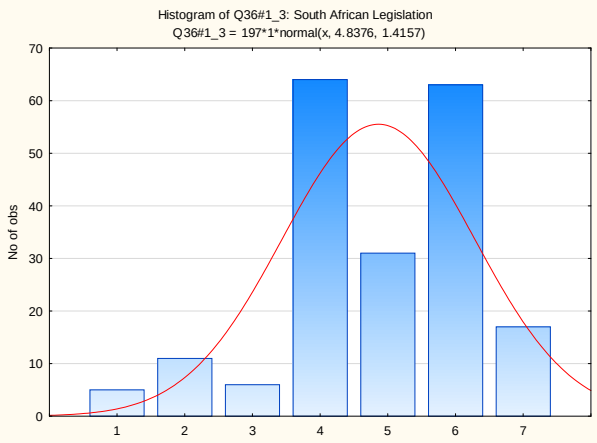
Variable	Descriptive Statistics								
	Valid N	Mean	Median	Mode	Frequency of Mode	Minimum	Maximum	Variance	Std.Dev.
Q36#1_2	197	3.573604	4.000000	4.000000	47	1.000000	7.000000	2.990728	1.729372



Q36#1_2: Value Gained from Piracy Outweighs Risk			
Id	**Value**	**Count**	**%**
1	Strongly Disagree	31	15.74%
2	Disagree	31	15.74%
3	Somewhat Disagree	28	14.21%
4	Neutral	47	23.86%
5	Somewhat Agree	28	14.21%
6	Agree	25	12.69%
7	Strongly Agree	7	3.55%

Q36_3 South Africa has legislation which criminalizes the illegal downloading of digital music.

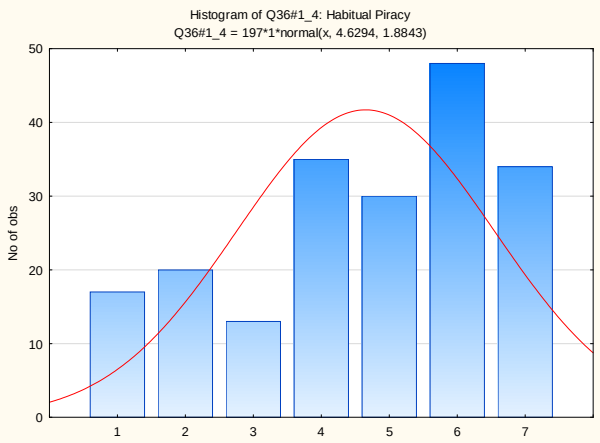
Variable	Descriptive Statistics								
	Valid N	Mean	Median	Mode	Frequency of Mode	Minimum	Maximum	Variance	Std.Dev.
Q36#1_3	197	4.837563	5.000000	4.000000	64	1.000000	7.000000	2.004092	1.415660



Q36#1_3: South African Legislation			
Id	**Value**	**Count**	**%**
1	Strongly Disagree	5	2.54%
2	Disagree	11	5.58%
3	Somewhat Disagree	6	3.05%
4	Neutral	64	32.49%
5	Somewhat Agree	31	15.74%
6	Agree	63	31.98%
7	Strongly Agree	17	8.63%

Q36_4 If I was to download "pirated" music from the internet and suffered no consequences, I would do so again.

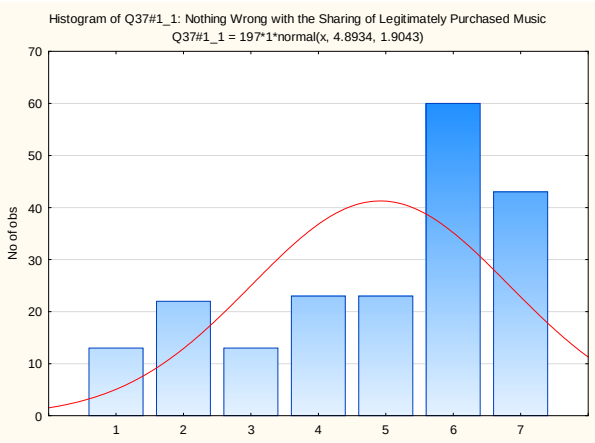
Variable	Descriptive Statistics								
	Valid N	Mean	Median	Mode	Frequency of Mode	Minimum	Maximum	Variance	Std.Dev.
Q36#1_4	197	4.629442	5.000000	6.000000	48	1.000000	7.000000	3.550761	1.884346



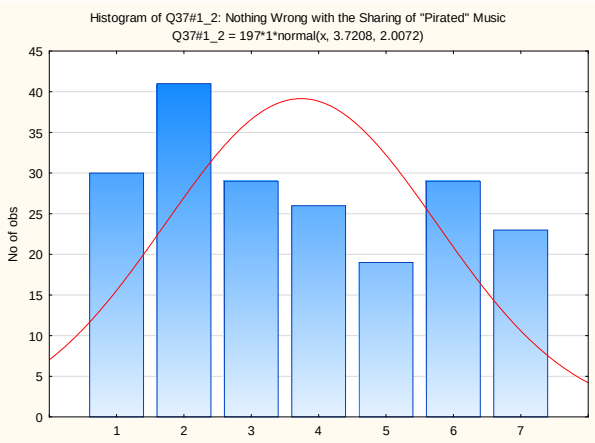
Q36#1_4: Habitual Piracy			
Id	**Value**	**Count**	**%**
1	Strongly Disagree	17	8.63%
2	Disagree	20	10.15%
3	Somewhat Disagree	13	6.60%
4	Neutral	35	17.77%
5	Somewhat Agree	30	15.23%
6	Agree	48	24.37%
7	Strongly Agree	34	17.26%

Q37_1 There is nothing wrong with sharing my legitimately purchased digital music with my friends, colleagues or family.
Q37_2 There is nothing wrong with sharing "pirated" digital music with my friends, colleagues or family.

Variable	Descriptive Statistics								
	Valid N	Mean	Median	Mode	Frequency of Mode	Minimum	Maximum	Variance	Std.Dev.
Q37#1_1	197	4.893401	6.000000	6.000000	60	1.000000	7.000000	3.626334	1.904294
Q37#1_2	197	3.720812	3.000000	2.000000	41	1.000000	7.000000	4.028799	2.007187



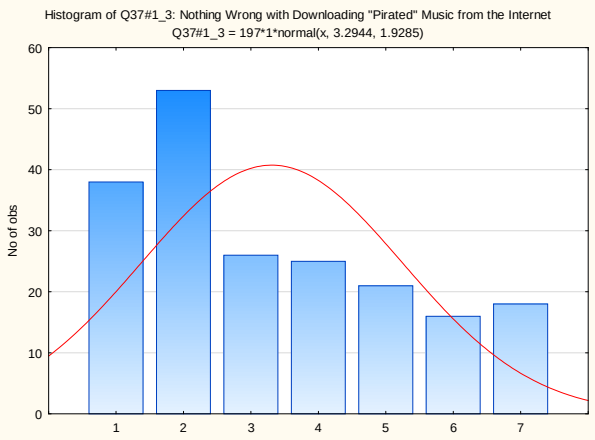
Histogram of Q37#1_1: Nothing Wrong with the Sharing of Legitimately Purchased Music			
Id	**Value**	**Count**	**%**
1	Strongly Disagree	13	6.60%
2	Disagree	22	11.17%
3	Somewhat Disagree	13	6.60%
4	Neutral	23	11.68%
5	Somewhat Agree	23	11.68%
6	Agree	60	30.46%
7	Strongly Agree	43	21.83%



Histogram of Q37#1_2: Nothing Wrong with the Sharing of "Pirated" Music			
Id	**Value**	**Count**	**%**
1	Strongly Disagree	30	15.23%
2	Disagree	41	20.81%
3	Somewhat Disagree	29	14.72%
4	Neutral	26	13.20%
5	Somewhat Agree	19	9.64%
6	Agree	29	14.72%
7	Strongly Agree	23	11.68%

Q37_3 There is nothing wrong with downloading "pirated" digital music from the internet.

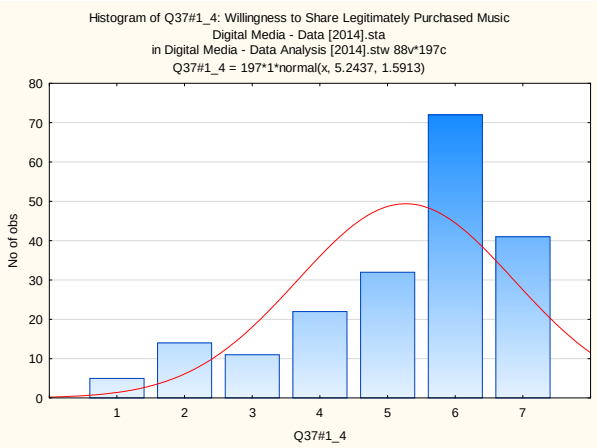
Variable	Descriptive Statistics								
	Valid N	Mean	Median	Mode	Frequency of Mode	Minimum	Maximum	Variance	Std.Dev.
Q37#1_3	197	3.294416	3.000000	2.000000	53	1.000000	7.000000	3.718999	1.928471



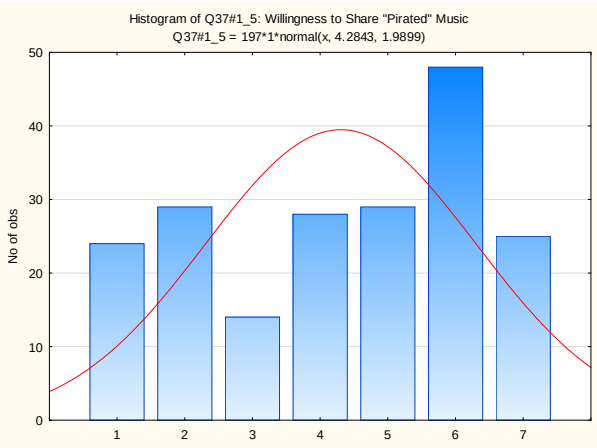
Histogram of Q37#1_3: Nothing Wrong with Downloading "Pirated" Music from the Internet			
Id	**Value**	**Count**	**%**
1	Strongly Disagree	38	19.29%
2	Disagree	53	26.90%
3	Somewhat Disagree	26	13.20%
4	Neutral	25	12.69%
5	Somewhat Agree	21	10.66%
6	Agree	16	8.12%
7	Strongly Agree	18	9.14%

Q37_4 I would share my legitimately purchased digital music with my friends, colleagues or family.
Q37_5 I would share "pirated" digital music with my friends, colleagues or family.

Variable	Descriptive Statistics								
	Valid N	Mean	Median	Mode	Frequency of Mode	Minimum	Maximum	Variance	Std.Dev.
Q37#1_4	197	5.243655	6.000000	6.000000	72	1.000000	7.000000	2.532166	1.591278
Q37#1_5	197	4.284264	5.000000	6.000000	48	1.000000	7.000000	3.959598	1.989874



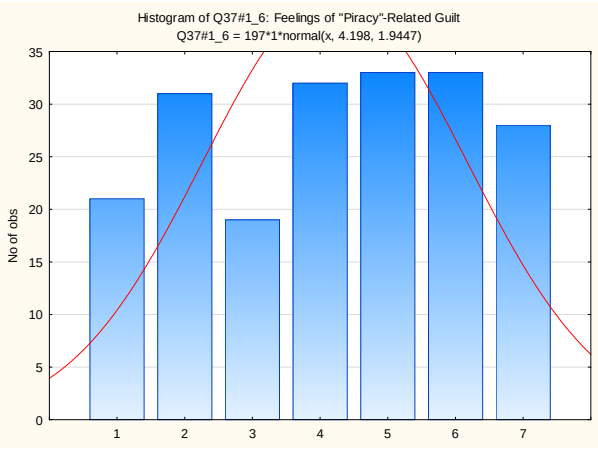
Histogram of Q37#1_4: Willingness to Share Legitimately Purchased Music			
Id	**Value**	**Count**	**%**
1	Strongly Disagree	5	2.54%
2	Disagree	14	7.11%
3	Somewhat Disagree	11	5.58%
4	Neutral	22	11.17%
5	Somewhat Agree	32	16.24%
6	Agree	72	36.55%
7	Strongly Agree	41	20.81%



Histogram of Q37#1_5: Willingness to Share "Pirated" Music			
Id	**Value**	**Count**	**%**
1	Strongly Disagree	24	12.18%
2	Disagree	29	14.72%
3	Somewhat Disagree	14	7.11%
4	Neutral	28	14.21%
5	Somewhat Agree	29	14.72%
6	Agree	48	24.37%
7	Strongly Agree	25	12.69%

Q37_6 I would feel guilty if I downloaded "pirated" music from the internet.

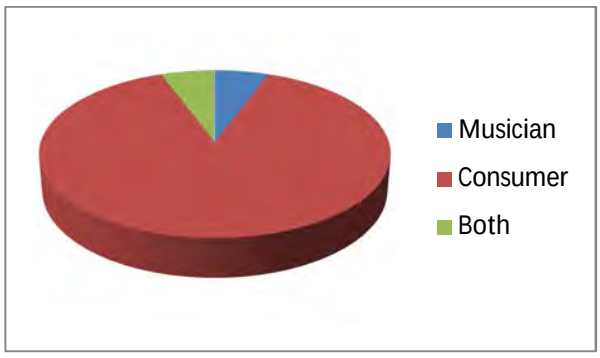
Variable	Descriptive Statistics								
	Valid N	Mean	Median	Mode	Frequency of Mode	Minimum	Maximum	Variance	Std.Dev.
Q37#1_6	197	4.197970	4.000000	Multiple	33	1.000000	7.000000	3.782037	1.944746



Q37#1_6: Feelings of "Piracy"-Related Guilt			
Id	**Value**	**Count**	**%**
1	Strongly Disagree	21	10.66%
2	Disagree	31	15.74%
3	Somewhat Disagree	19	9.64%
4	Neutral	32	16.24%
5	Somewhat Agree	33	16.75%
6	Agree	33	16.75%
7	Strongly Agree	28	14.21%

SECTION D: FURTHER PARTICIPATION (OPTIONAL)

Q38 I am willing to be interviewed in order to participate further with this research.



Id	Value	Count
1	Musician	3
2	Consumer	47
3	Both	3

Appendix F: Preliminary Calculations

All data contained in this appendix has been exported from STATISTICA and are presented in "raw" format for reference purposes.

1 Conceptual Model Constructs: Internal Validity Calculations

1.1 Attitude Towards Digital Music Piracy ("Attitude")

variable	Correlations	
	Q37#1_2	Q37#1_3
Q37#1_2	1.000	0.839
Q37#1_3	0.839	1.000

variable	Summary for scale: Mean=7.01523 Std.Dv.=3.77353 Valid N:197 Cronbach alpha: .911793 Standardized alpha: .912190 Average inter-item corr.: .838556				
	Mean if deleted	Var. if deleted	StDv. if deleted	Itm-Totl Correl.	Alpha if deleted
Q37#1_2	3.294416	3.700121	1.923570	0.838556	
Q37#1_3	3.720812	4.008349	2.002086	0.838556	

1.2 Digital Music Piracy Behaviour ("Behaviour")

variable	Correlations			
	Q34#1_3	Q34#1_4	Q34#1_5	Q37#1_5
Q34#1_3	1.000	0.823	0.633	0.627
Q34#1_4	0.823	1.000	0.556	0.526
Q34#1_5	0.633	0.556	1.000	0.553
Q37#1_5	0.627	0.526	0.553	1.000

variable	Summary for scale: Mean=18.5381 Std.Dv.=6.51958 Valid N:197 Cronbach alpha: .863328 Standardized alpha: .866925 Average inter-item corr.: .633467				
	Mean if deleted	Var. if deleted	StDv. if deleted	Itm-Totl Correl.	Alpha if deleted
Q34#1_3	13.38071	23.98196	4.897138	0.825149	0.780367
Q34#1_4	13.42640	25.72681	5.072161	0.733645	0.818348
Q34#1_5	14.55330	24.33853	4.933410	0.660900	0.849360
Q37#1_5	14.25381	25.43812	5.043622	0.644889	0.853277

1.3 Technical Ability

variable	Correlations		
	Q35#1_1	Q35#1_2	Q35#1_3
Q35#1_1	1.000	0.923	0.845
Q35#1_2	0.923	1.000	0.904
Q35#1_3	0.845	0.904	1.000

variable	Summary for scale: Mean=16.8122 Std.Dv.=4.70022 Valid N:197 Cronbach alpha: .960118 Standardized alpha: .960636 Average inter-item corr.: .894973				
	Mean if deleted	Var. if deleted	StDv. if deleted	Itm-Totl Correl.	Alpha if deleted
Q35#1_1	11.27411	9.65075	3.106566	0.906943	0.948544
Q35#1_2	11.23858	9.57252	3.093949	0.951548	0.913669
Q35#1_3	11.11168	10.66773	3.266149	0.891490	0.959672

1.4 Convenience

variable	Correlations	
	Q34#1_1	Q34#1_2
Q34#1_1	1.000	0.602
Q34#1_2	0.602	1.000

variable	Summary for scale: Mean=9.87310 Std.Dv.=3.14920 Valid N:197 Cronbach alpha: .743898 Standardized alpha: .751572 Average inter-item corr.: .602015				
	Mean if deleted	Var. if deleted	StDv. if deleted	Itm-Totl Correl.	Alpha if deleted
Q34#1_1	4.421320	3.654977	1.911799	0.602015	
Q34#1_2	5.451777	2.542091	1.594393	0.602015	

1.5 Price

variable	Correlations	
	Q33#1_2	Q33#1_3
Q33#1_2	1.000	0.905
Q33#1_3	0.905	1.000

variable	Summary for scale: Mean=9.21827 Std.Dv.=3.09510 Valid N:197 Cronbach alpha: .949947 Standardized alpha: .950009 Average inter-item corr.: .904779				
	Mean if deleted	Var. if deleted	StDv. if deleted	Itm-Totl Correl.	Alpha if deleted
Q33#1_2	4.614213	2.541524	1.594216	0.904779	
Q33#1_3	4.604061	2.462522	1.569242	0.904779	

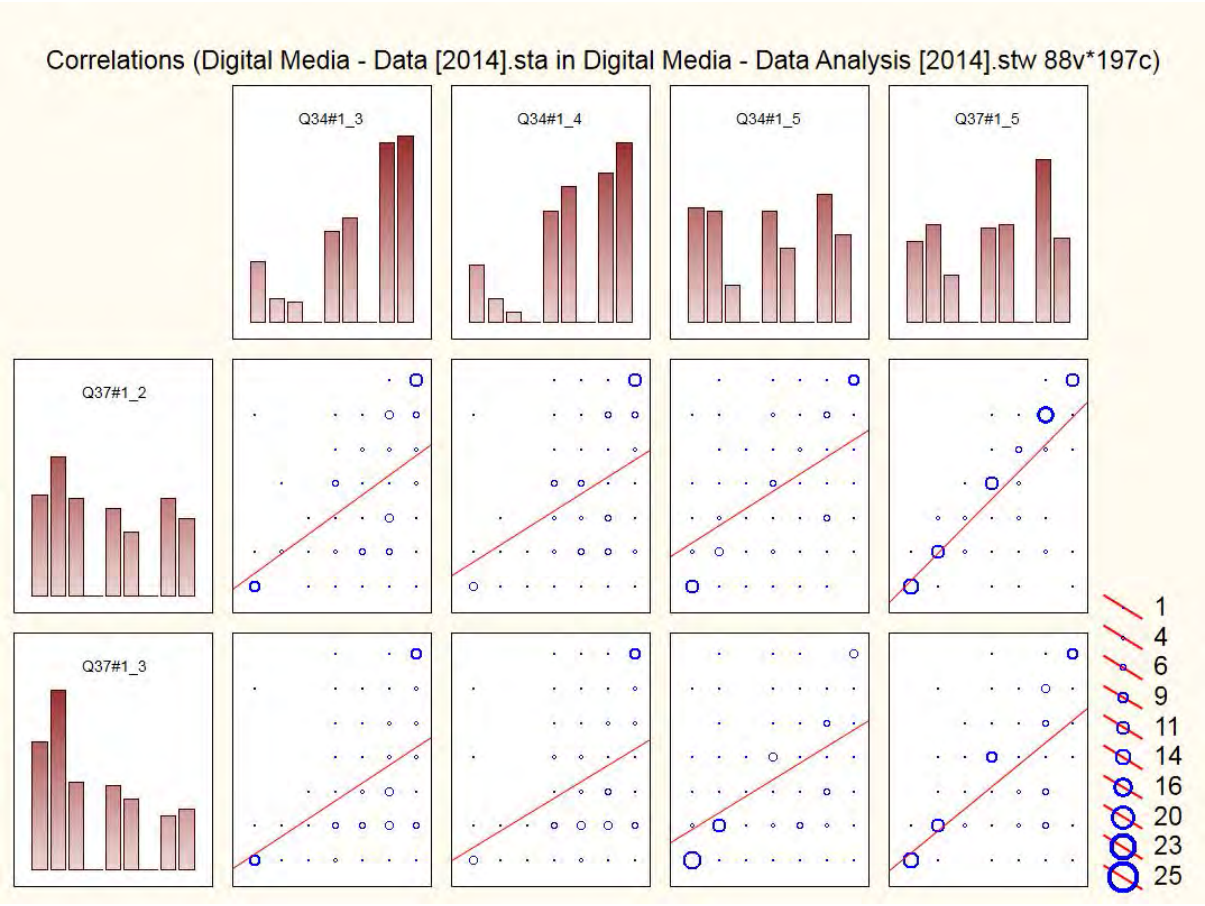
2 Hypothesis Testing

2.1 Spearman's Rank Order Correlations

2.1.1 H_1 : "Attitude" / "Behaviour"

Variable	Spearman Rank Order Correlations MD pairwise deleted Marked correlations are significant at p <.05000					
	Q37#1_2	Q37#1_3	Q34#1_3	Q34#1_4	Q34#1_5	Q37#1_5
Q37#1_2	1.000000	0.845168	0.512663	0.423040	0.532810	0.783946
Q37#1_3	0.845168	1.000000	0.506738	0.441982	0.545567	0.673309
Q34#1_3	0.512663	0.506738	1.000000	0.823109	0.608955	0.601959
Q34#1_4	0.423040	0.441982	0.823109	1.000000	0.528152	0.512031
Q34#1_5	0.532810	0.545567	0.608955	0.528152	1.000000	0.556166
Q37#1_5	0.783946	0.673309	0.601959	0.512031	0.556166	1.000000

Pair of Variables	MD pairwise deleted Marked correlations are significant at p <.05000			
	Valid N	Spearman R	t(N-2)	p-value
Q37#1_2 & Q34#1_3	197	0.512663	8.33804	0.000000
Q37#1_2 & Q34#1_4	197	0.423040	6.51955	0.000000
Q37#1_2 & Q34#1_5	197	0.532810	8.79223	0.000000
Q37#1_2 & Q37#1_5	197	0.783946	17.63321	0.000000
Q37#1_3 & Q34#1_3	197	0.506738	8.20810	0.000000
Q37#1_3 & Q34#1_4	197	0.441982	6.88046	0.000000
Q37#1_3 & Q34#1_5	197	0.545567	9.09048	0.000000
Q37#1_3 & Q37#1_5	197	0.673309	12.71673	0.000000

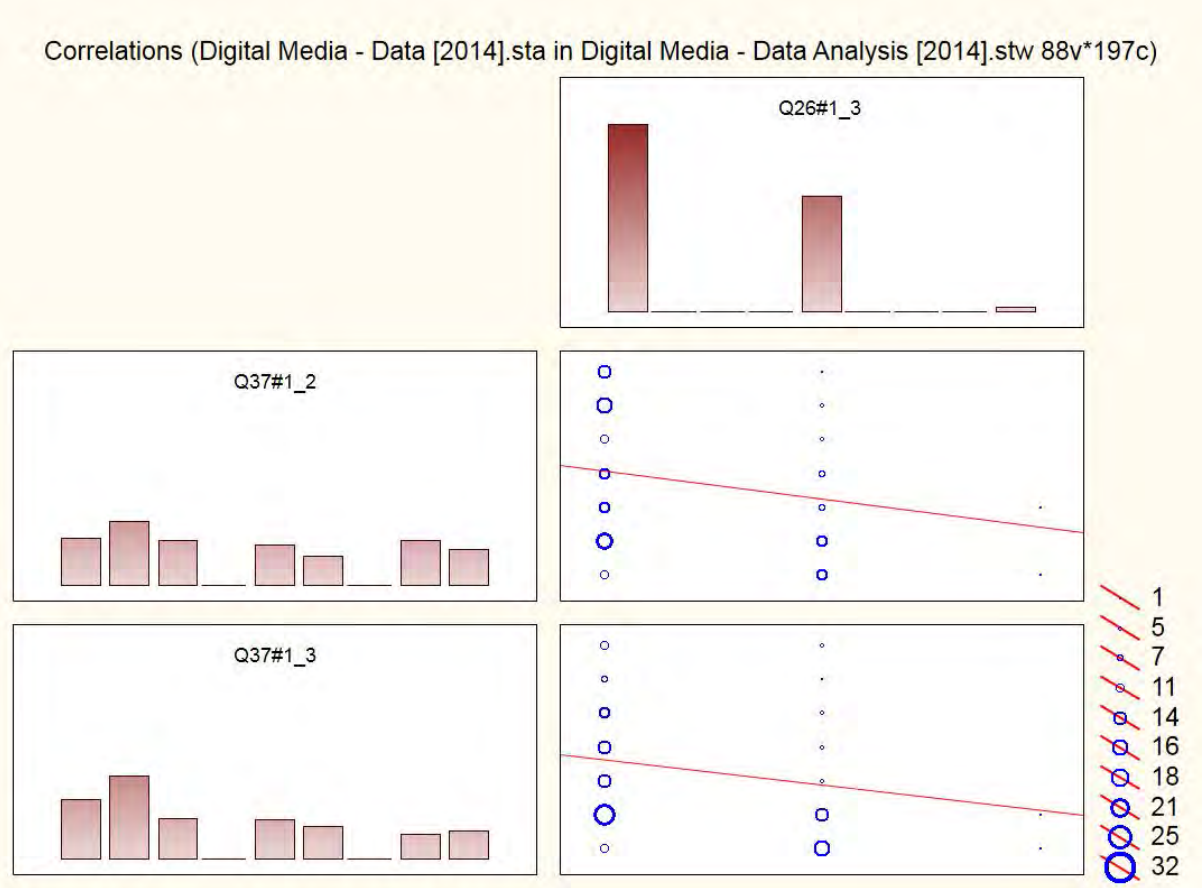

Correlations (Digital Media - Data [2014].sta in Digital Media - Data Analysis [2014].stw 88v*197c)
Q34#1_3
Q34#1_4
Q34#1_5
Q37#1_5
Q37#1_2
Q37#1_3
1
4
6
9
11
14
16
20
23
25

2.1.2 H_3 : "Attitude" / "Awareness"

2.1.2.1 "Attitude" / "Awareness" of "The Pirate Bay"

Variable	Spearman Rank Order Correlations MD pairwise deleted Marked correlations are significant at p <.05000		
	Q37#1_2	Q37#1_3	Q26#1_3
Q37#1_2	1.000000	0.845168	-0.209951
Q37#1_3	0.845168	1.000000	-0.221437
Q26#1_3	-0.209951	-0.221437	1.000000

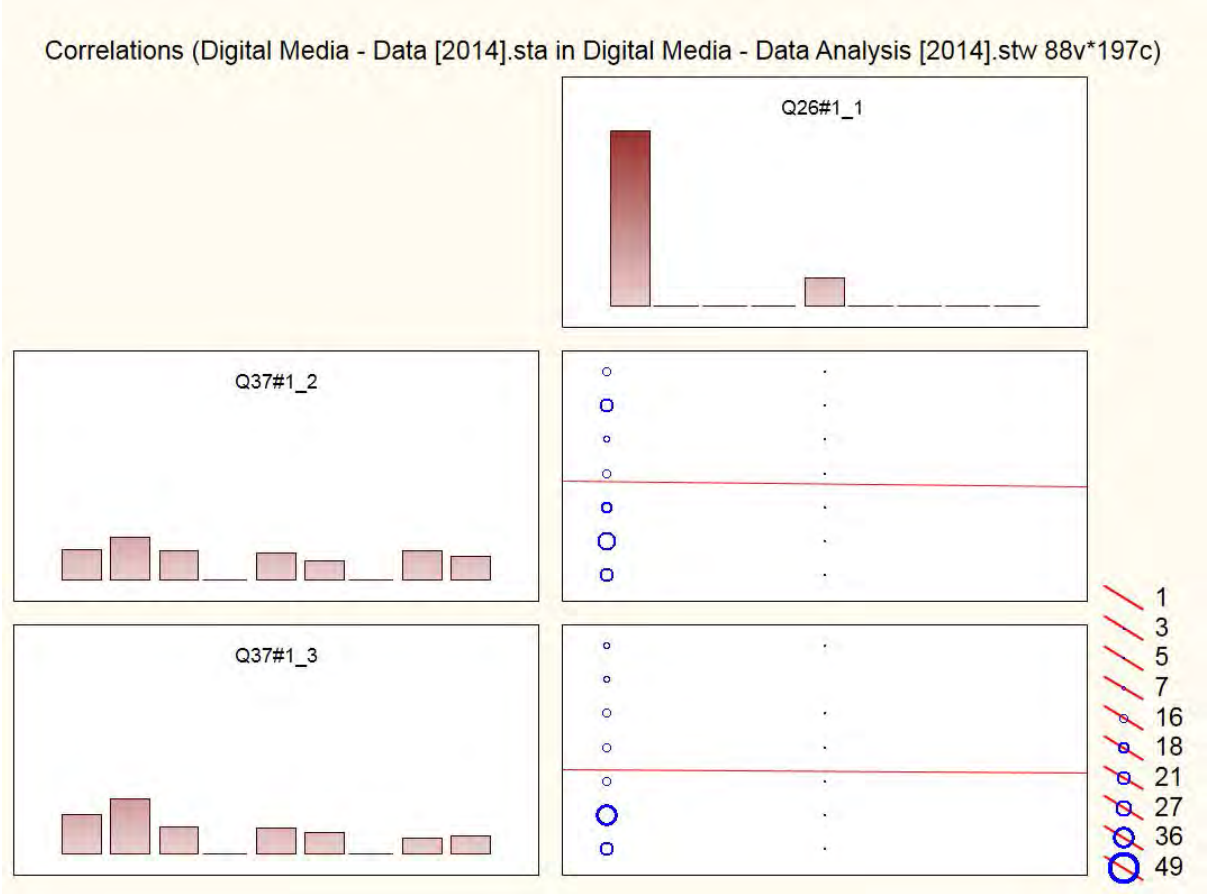
Pair of Variables	Spearman Rank Order Correlations MD pairwise deleted Marked correlations are significant at p <.05000			
	Valid N	Spearman R	t(N-2)	p-value
Q37#1_2 & Q26#1_3	197	-0.209951	-2.99864	0.003065
Q37#1_3 & Q26#1_3	197	-0.221437	-3.17091	0.001765



2.1.2.2 "Attitude" / "Awareness" of "iTunes"

Variable	Spearman Rank Order Correlations MD pairwise deleted Marked correlations are significant at p <.05000		
	Q37#1_2	Q37#1_3	Q26#1_1
Q37#1_2	1.000000	0.845168	0.001685
Q37#1_3	0.845168	1.000000	-0.003291
Q26#1_1	0.001685	-0.003291	1.000000

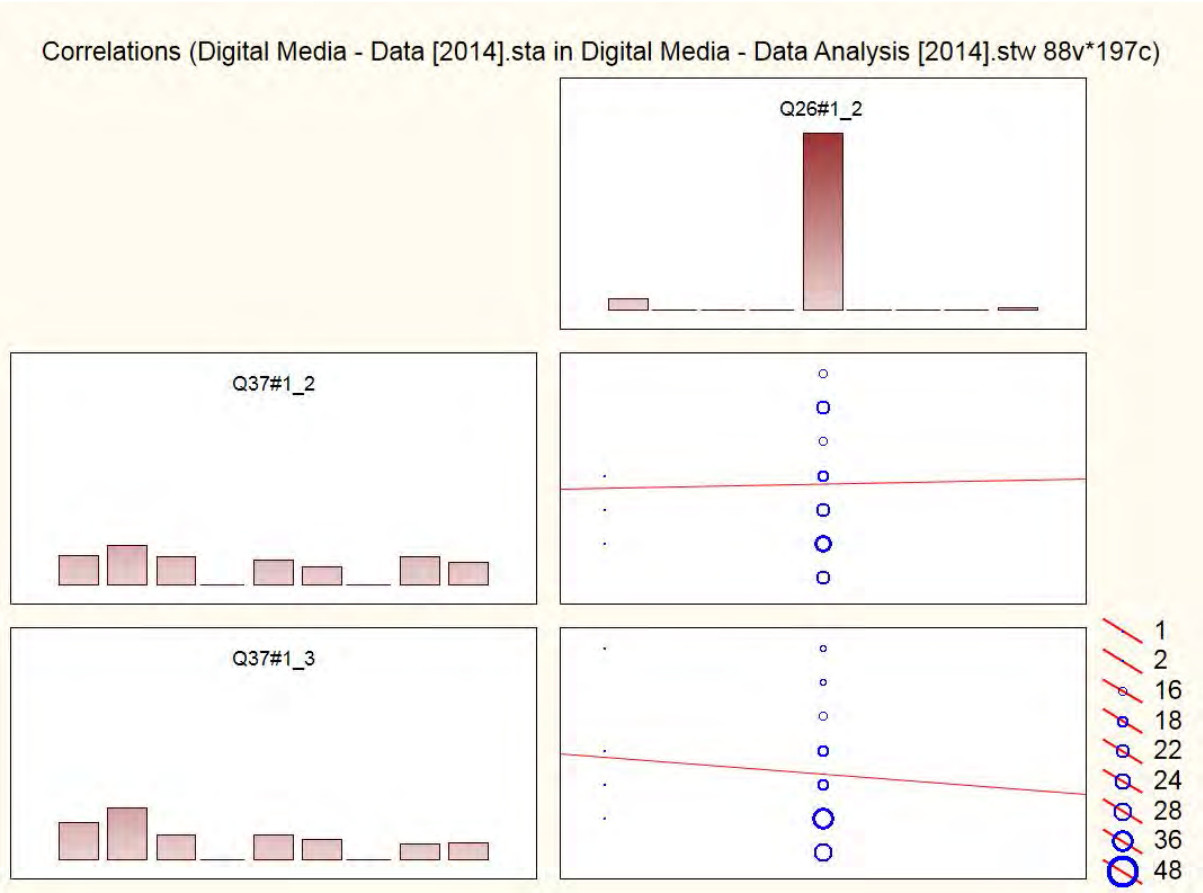
Pair of Variables	Spearman Rank Order MD pairwise deleted Marked correlations are significant at p <.05000			
	Valid N	Spearman R	t(N-2)	p-value
Q37#1_2 & Q26#1_1	197	0.001685	0.023530	0.981251
Q37#1_3 & Q26#1_1	197	-0.003291	-0.045955	0.963393



2.1.2.3 "Attitude" / "Awareness" of "Deezer"

Variable	Spearman Rank Order MD pairwise deleted Marked correlations are significant at p <.05000		
	Q37#1_2	Q37#1_3	Q26#1_2
Q37#1_2	1.000000	0.845168	0.004114
Q37#1_3	0.845168	1.000000	-0.075202
Q26#1_2	0.004114	-0.075202	1.000000

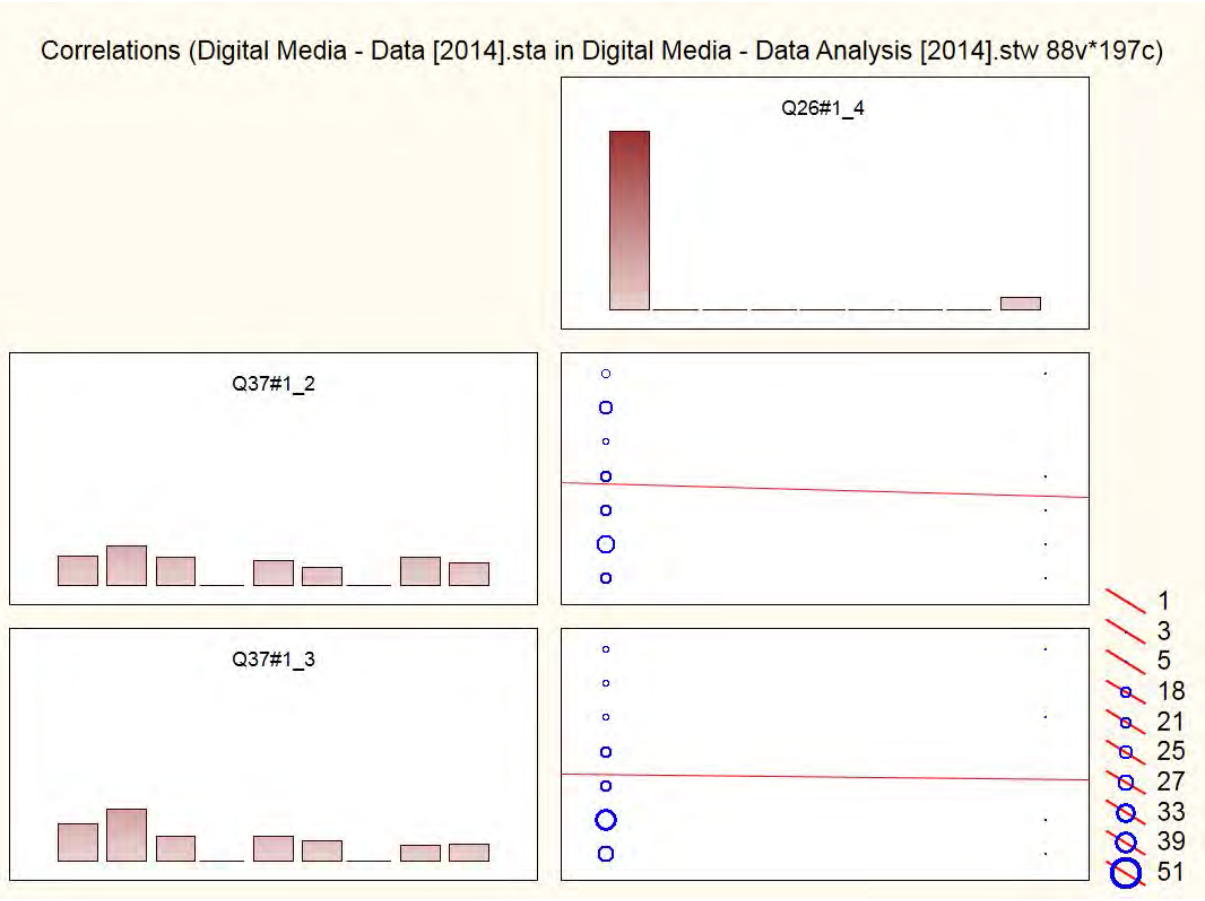
Pair of Variables	Spearman Rank Order MD pairwise deleted Marked correlations are significant at p <.05000			
	Valid N	Spearman R	t(N-2)	p-value
Q37#1_2 & Q26#1_2	196	0.004114	0.05730	0.954368
Q37#1_3 & Q26#1_2	196	-0.075202	-1.05042	0.294834



2.1.2.4 "Attitude" / "Awareness" of "YouTube"

Variable	Spearman Rank Order MD pairwise deleted Marked correlations are significant at p <.05000		
	Q37#1_2	Q37#1_3	Q26#1_4
Q37#1_2	1.000000	0.845168	-0.042938
Q37#1_3	0.845168	1.000000	-0.043520
Q26#1_4	-0.042938	-0.043520	1.000000

Pair of Variables	Spearman Rank Order Correlations MD pairwise deleted Marked correlations are significant at p <.05000			
	Valid N	Spearman R	t(N-2)	p-value
Q37#1_2 & Q26#1_4	197	-0.042938	-0.600144	0.549107
Q37#1_3 & Q26#1_4	197	-0.043520	-0.608302	0.543695

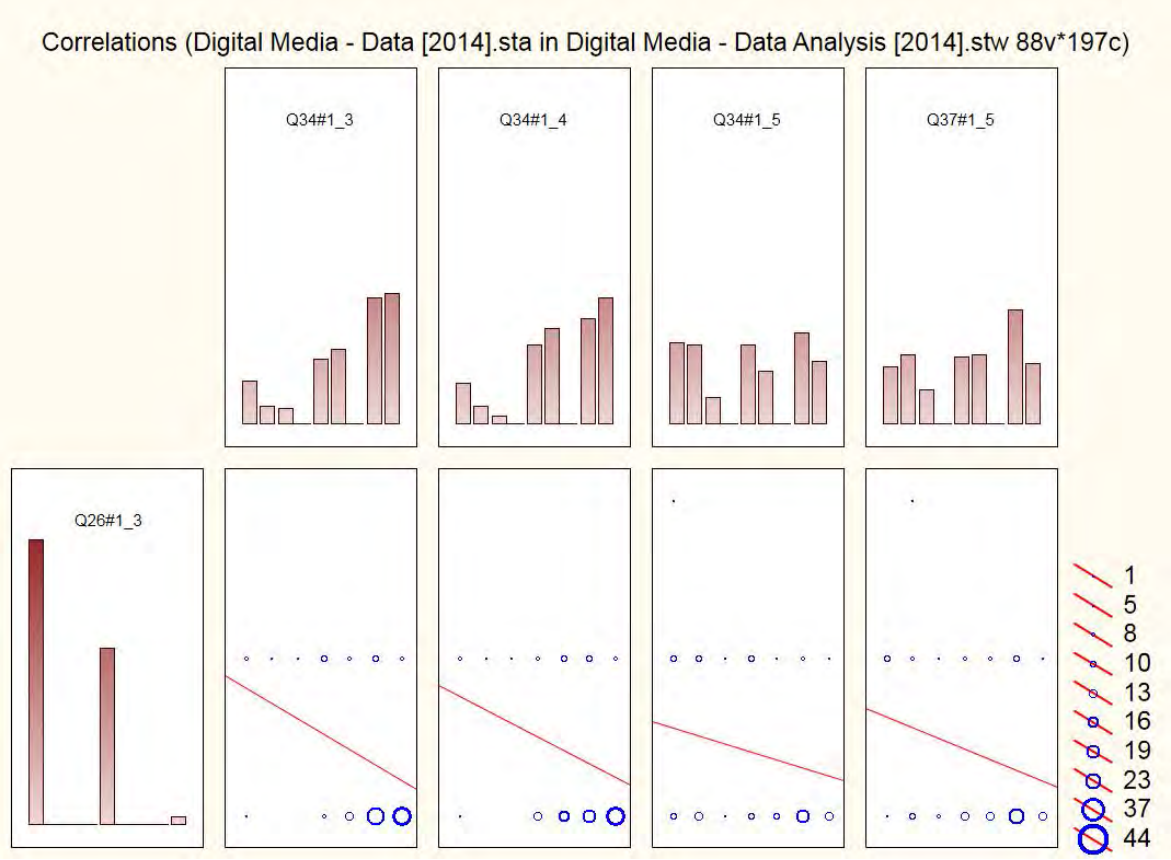


2.1.3 H_4 : "Awareness" / "Behaviour"

2.1.3.1 "Awareness" of "The Pirate Bay" / "Behaviour"

Variable	Spearman Rank Order Correlations MD pairwise deleted Marked correlations are significant at p <.05000				
	Q26#1_3	Q34#1_3	Q34#1_4	Q34#1_5	Q37#1_5
Q26#1_3	1.000000	-0.355000	-0.287965	-0.201132	-0.237961
Q34#1_3	-0.355000	1.000000	0.823109	0.608955	0.601959
Q34#1_4	-0.287965	0.823109	1.000000	0.528152	0.512031
Q34#1_5	-0.201132	0.608955	0.528152	1.000000	0.556166
Q37#1_5	-0.237961	0.601959	0.512031	0.556166	1.000000

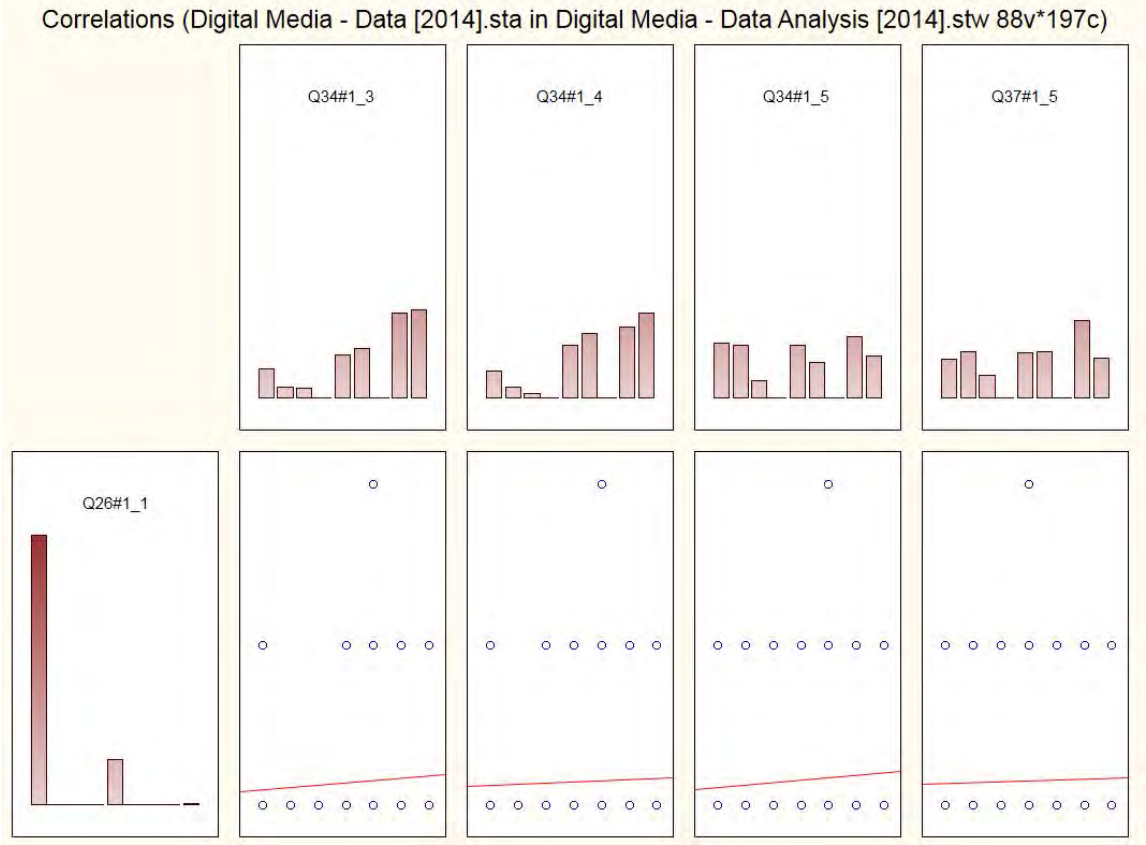
Pair of Variables	Spearman Rank Order Correlations MD pairwise deleted Marked correlations are significant at p <.05000			
	Valid N	Spearman R	t(N-2)	p-value
Q26#1_3 & Q34#1_3	197	-0.355000	-5.30269	0.000000
Q26#1_3 & Q34#1_4	197	-0.287965	-4.19908	0.000041
Q26#1_3 & Q34#1_5	197	-0.201132	-2.86725	0.004596
Q26#1_3 & Q37#1_5	197	-0.237961	-3.42122	0.000759



2.1.3.2 "Awareness" of "iTunes" / "Behaviour"

Variable	Spearman Rank Order Correlations MD pairwise deleted Marked correlations are significant at p <.05000				
	Q26#1_1	Q34#1_3	Q34#1_4	Q34#1_5	Q37#1_5
Q26#1_1	1.000000	0.051704	0.023902	0.082228	0.026786
Q34#1_3	0.051704	1.000000	0.823109	0.608955	0.601959
Q34#1_4	0.023902	0.823109	1.000000	0.528152	0.512031
Q34#1_5	0.082228	0.608955	0.528152	1.000000	0.556166
Q37#1_5	0.026786	0.601959	0.512031	0.556166	1.000000

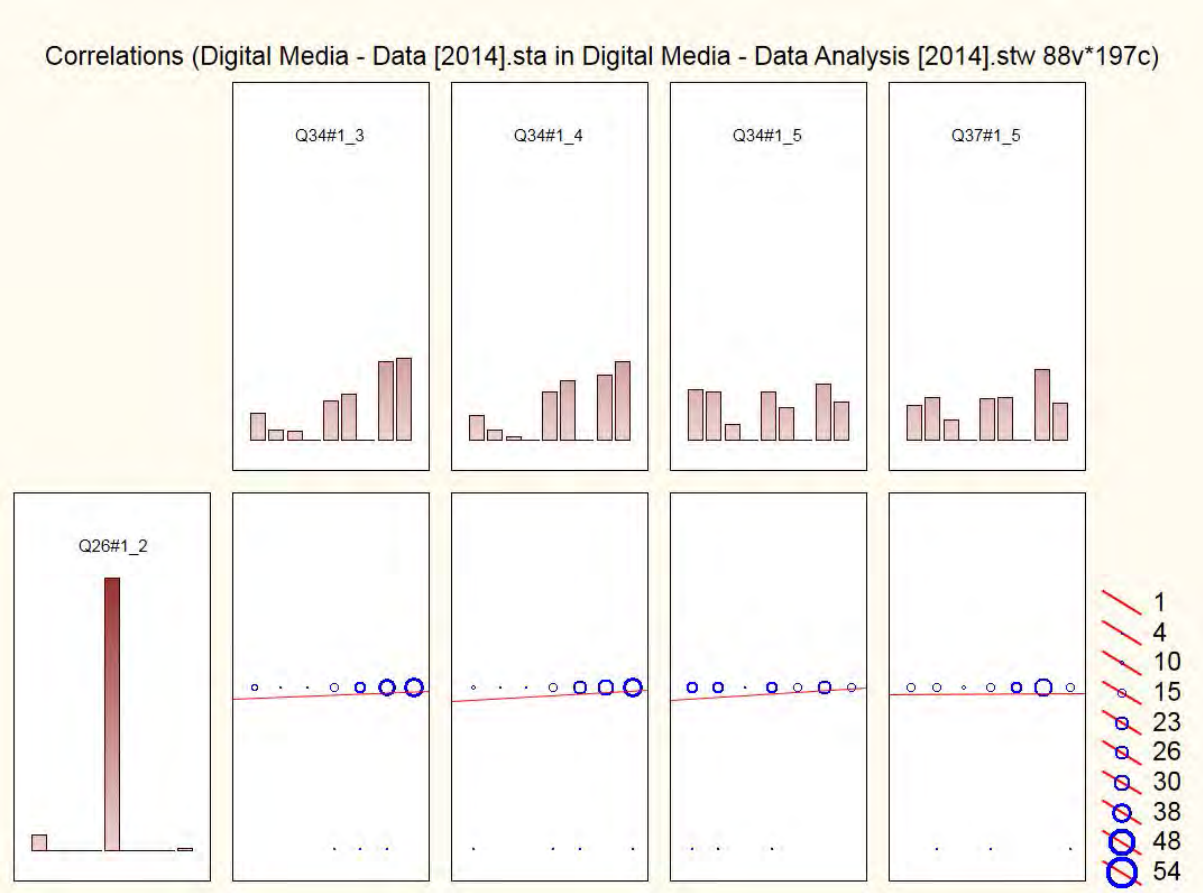
Pair of Variables	Spearman Rank Order Correlations D pairwise deleted Marked correlations are significant at p <.05000			
	Valid N	Spearman R	t(N-2)	p-value
Q26#1_1 & Q34#1_3	197	0.051704	0.722981	0.470558
Q26#1_1 & Q34#1_4	197	0.023902	0.333875	0.738833
Q26#1_1 & Q34#1_5	197	0.082228	1.152152	0.250669
Q26#1_1 & Q37#1_5	197	0.026786	0.374184	0.708674



2.1.3.3 "Awareness" of "Deezer" / "Behaviour"

Variable	Spearman Rank Order Correlations MD pairwise deleted Marked correlations are significant at p <.05000				
	Q26#1_2	Q34#1_3	Q34#1_4	Q34#1_5	Q37#1_5
Q26#1_2	1.000000	0.073995	0.080184	0.085119	0.012264
Q34#1_3	0.073995	1.000000	0.823109	0.608955	0.601959
Q34#1_4	0.080184	0.823109	1.000000	0.528152	0.512031
Q34#1_5	0.085119	0.608955	0.528152	1.000000	0.556166
Q37#1_5	0.012264	0.601959	0.512031	0.556166	1.000000

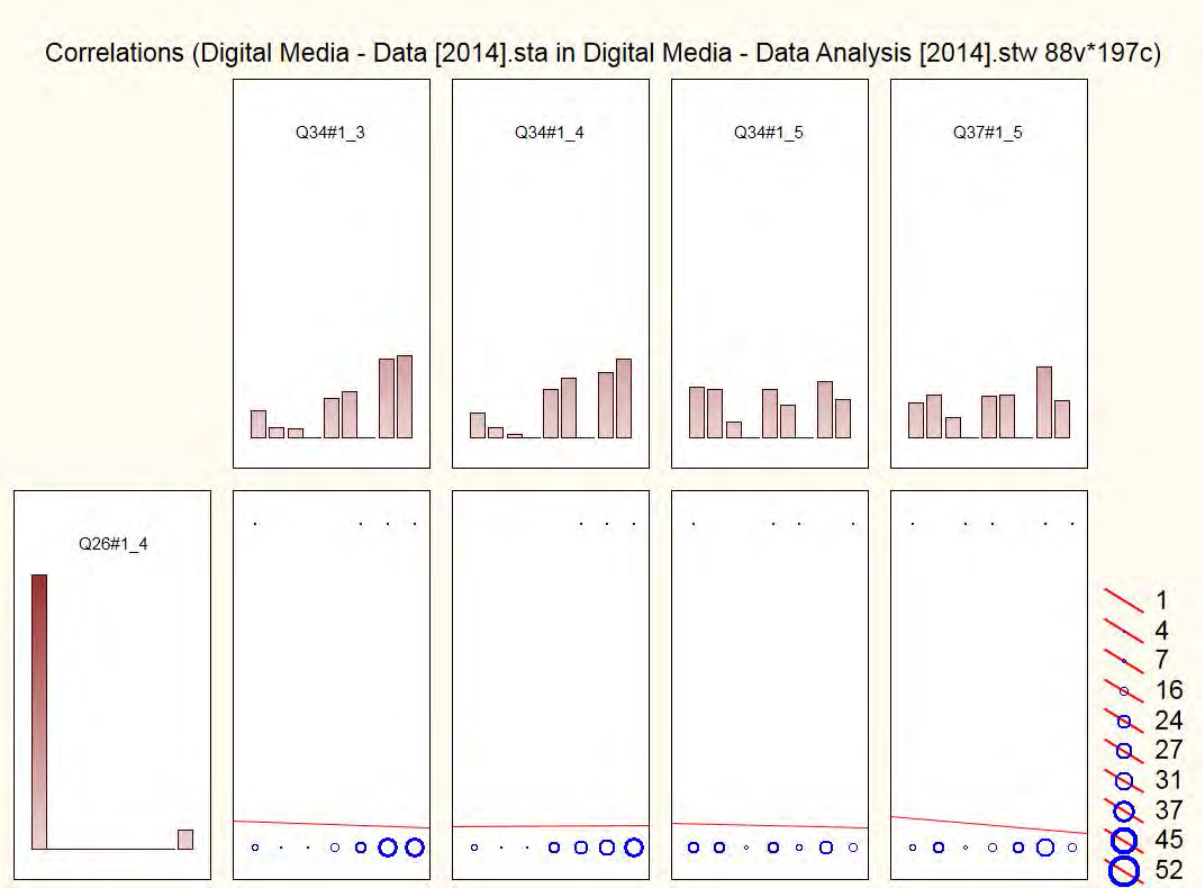
Pair of Variables	Spearman Rank Order MD pairwise deleted Marked correlations are significant at p <.05000			
	Valid N	Spearman R	t(N-2)	p-value
Q26#1_2 & Q34#1_3	196	0.073995	1.033471	0.302670
Q26#1_2 & Q34#1_4	196	0.080184	1.120442	0.263911
Q26#1_2 & Q34#1_5	196	0.085119	1.189888	0.235545
Q26#1_2 & Q37#1_5	196	0.012264	0.170827	0.864538



2.1.3.4 "Awareness" of "YouTube" / "Behaviour"

Variable	Spearman Rank Order Correlations (Digital Media - Data [2014].sta in Digital Media - Data Analysis [2014].stw) MD pairwise deleted Marked correlations are significant at p <.05000				
	Q26#1_4	Q34#1_3	Q34#1_4	Q34#1_5	Q37#1_5
Q26#1_4	1.000000	-0.025433	-0.002023	-0.021489	-0.050141
Q34#1_3	-0.025433	1.000000	0.823109	0.608955	0.601959
Q34#1_4	-0.002023	0.823109	1.000000	0.528152	0.512031
Q34#1_5	-0.021489	0.608955	0.528152	1.000000	0.556166
Q37#1_5	-0.050141	0.601959	0.512031	0.556166	1.000000

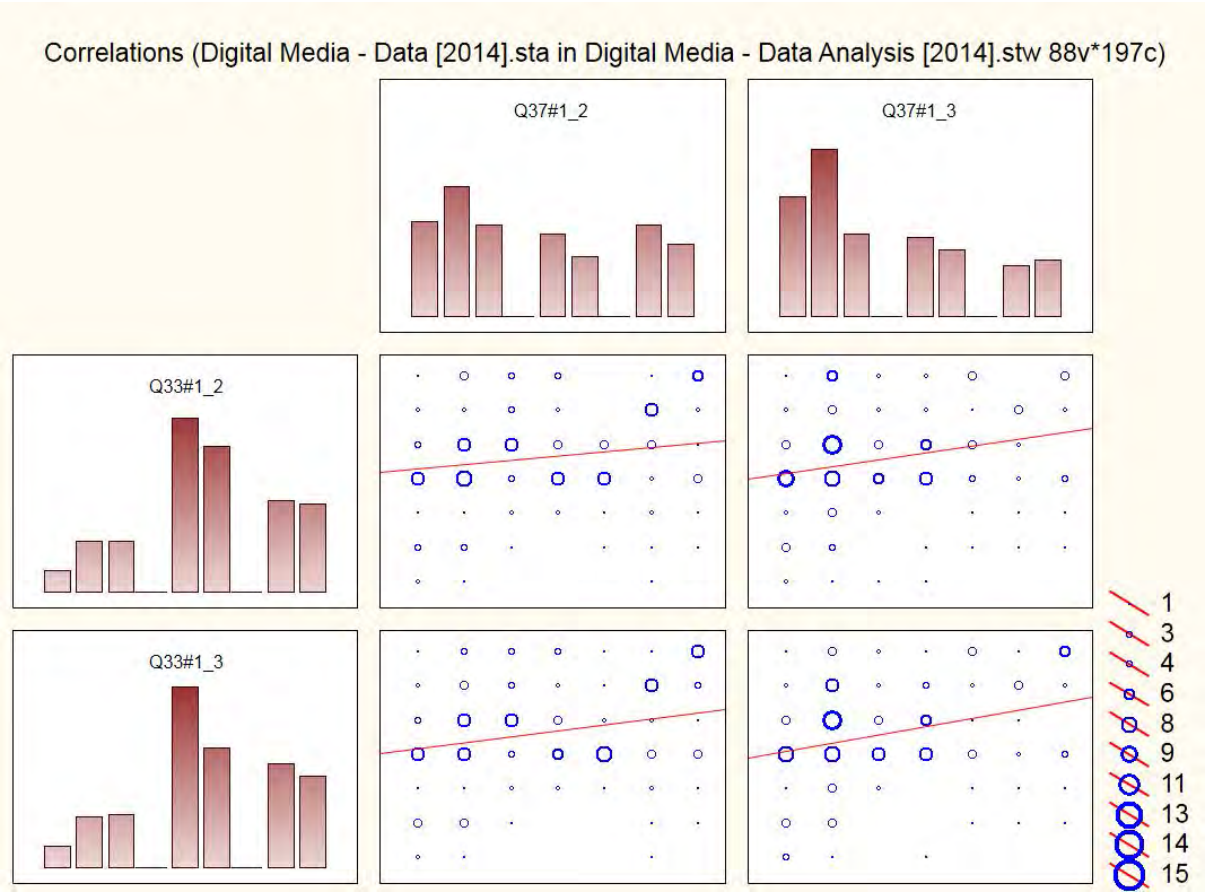
Pair of Variables	Spearman Rank Order Correlations MD pairwise deleted Marked correlations are significant at p <.05000			
	Valid N	Spearman R	t(N-2)	p-value
Q26#1_4 & Q34#1_3	197	-0.025433	-0.355268	0.722773
Q26#1_4 & Q34#1_4	197	-0.002023	-0.028248	0.977494
Q26#1_4 & Q34#1_5	197	-0.021489	-0.300152	0.764381
Q26#1_4 & Q37#1_5	197	-0.050141	-0.701070	0.484095



2.1.4 H_5 : "Price" / "Attitude"

Variable	Spearman Rank Order Correlations MD pairwise deleted Marked correlations are significant at p <.05000			
	Q33#1_2	Q33#1_3	Q37#1_2	Q37#1_3
Q33#1_2	1.000000	0.912471	0.163260	0.249886
Q33#1_3	0.912471	1.000000	0.196859	0.276920
Q37#1_2	0.163260	0.196859	1.000000	0.845168
Q37#1_3	0.249886	0.276920	0.845168	1.000000

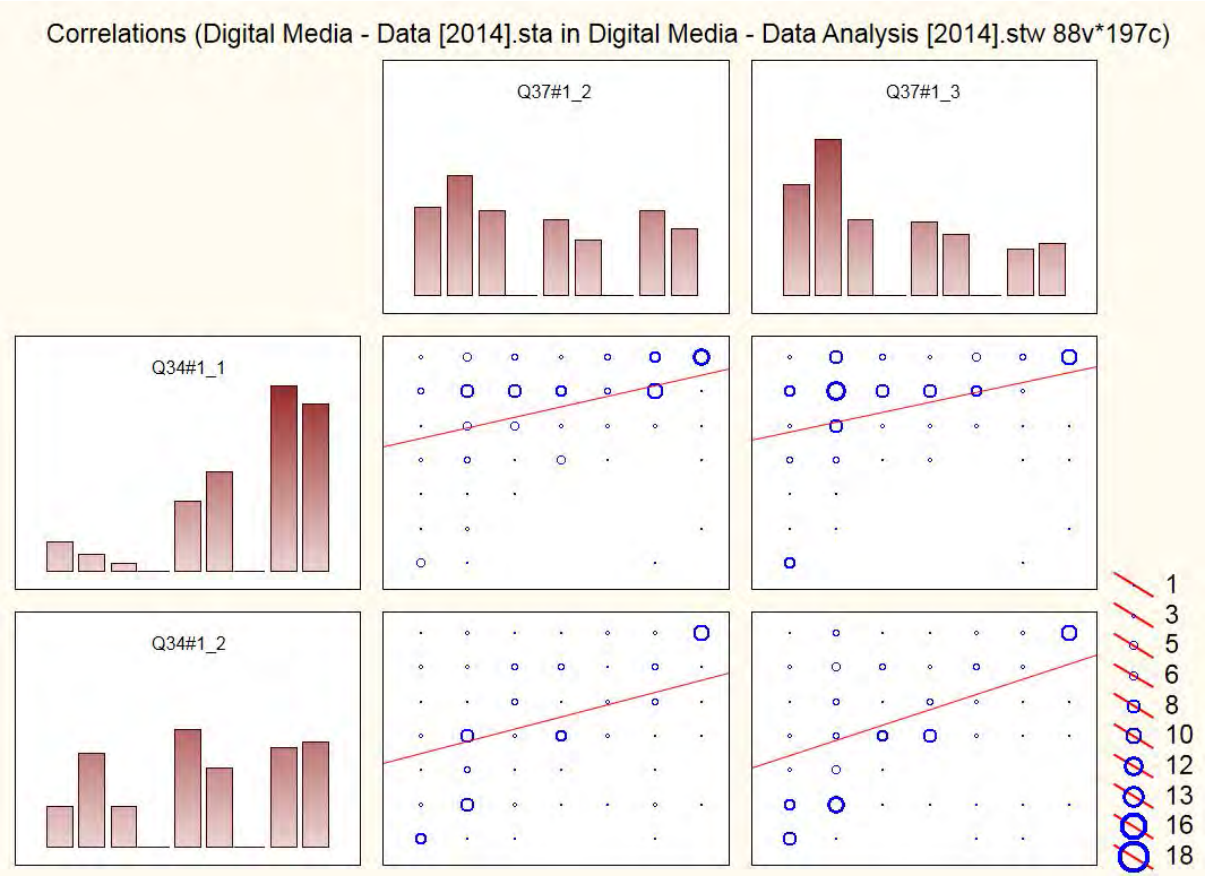
Pair of Variables	Spearman Rank Order MD pairwise deleted Marked correlations are significant at p <.05000			
	Valid N	Spearman R	t(N-2)	p-value
Q33#1_2 & Q37#1_2	197	0.163260	2.310812	0.021889
Q33#1_2 & Q37#1_3	197	0.249886	3.603795	0.000398
Q33#1_3 & Q37#1_2	197	0.196859	2.803850	0.005560
Q33#1_3 & Q37#1_3	197	0.276920	4.024358	0.000082



2.1.5 H_6 : "Convenience" / "Attitude"

Variable	Spearman Rank Order Correlations MD pairwise deleted Marked correlations are significant at p <.05000			
	Q34#1_1	Q34#1_2	Q37#1_2	Q37#1_3
Q34#1_1	1.000000	0.574014	0.378622	0.368605
Q34#1_2	0.574014	1.000000	0.382414	0.454994
Q37#1_2	0.378622	0.382414	1.000000	0.845168
Q37#1_3	0.368605	0.454994	0.845168	1.000000

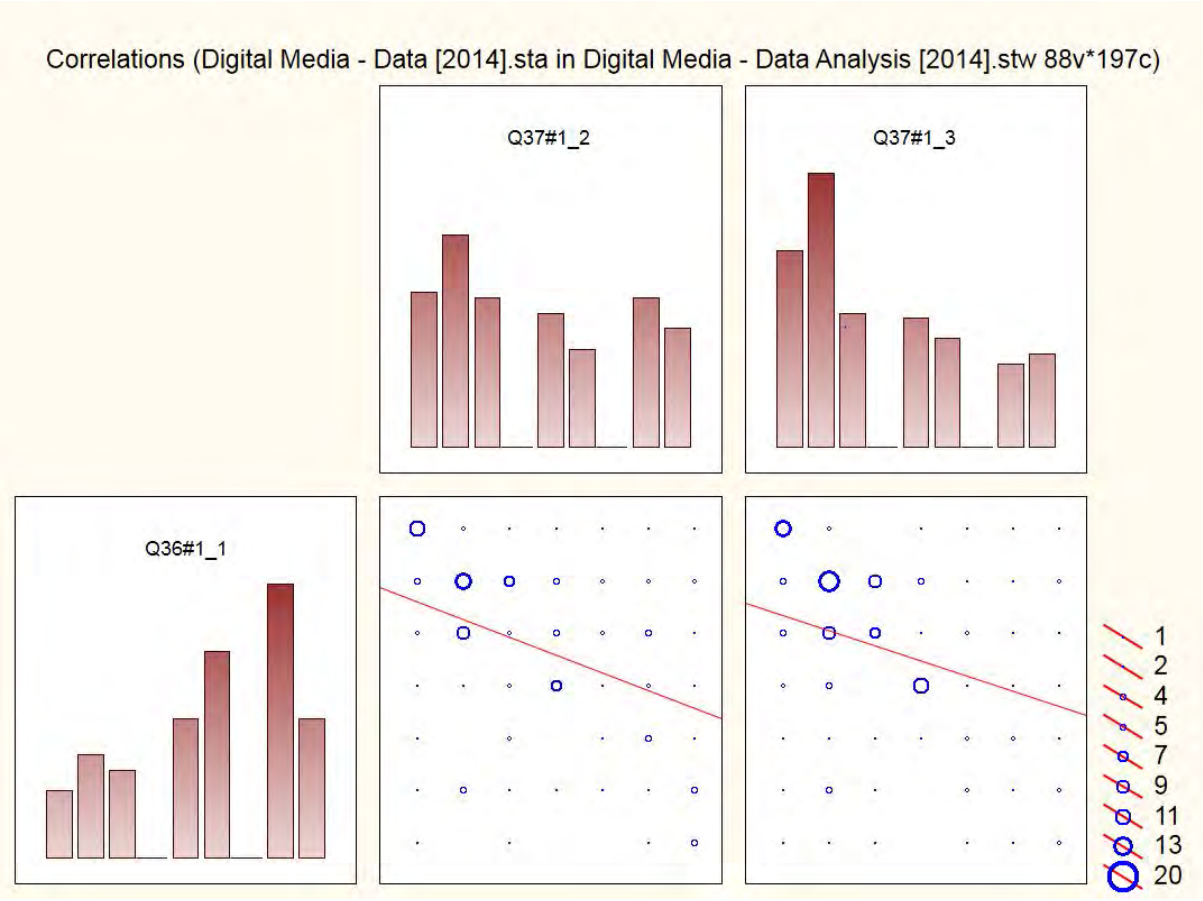
Pair of Variables	MD pairwise deleted Marked correlations are significant at p <.05000			
	Valid N	Spearman R	t(N-2)	p-value
Q34#1_1 & Q37#1_2	197	0.378622	5.712446	0.000000
Q34#1_1 & Q37#1_3	197	0.368605	5.537179	0.000000
Q34#1_2 & Q37#1_2	197	0.382414	5.779411	0.000000
Q34#1_2 & Q37#1_3	197	0.454994	7.134972	0.000000



2.1.6 H_7 : "Risk" / "Attitude"

Variable	Spearman Rank Order Correlations MD pairwise deleted Marked correlations are significant at p <.05000		
	Q36#1_1	Q37#1_2	Q37#1_3
Q36#1_1	1.000000	-0.373888	-0.313121
Q37#1_2	-0.373888	1.000000	0.845168
Q37#1_3	-0.313121	0.845168	1.000000

Pair of Variables	Spearman Rank Order Correlations MD pairwise deleted Marked correlations are significant at p <.05000			
	Valid N	Spearman R	t(N-2)	p-value
Q36#1_1 & Q37#1_2	197	-0.373888	-5.62933	0.000000
Q36#1_1 & Q37#1_3	197	-0.313121	-4.60402	0.000007

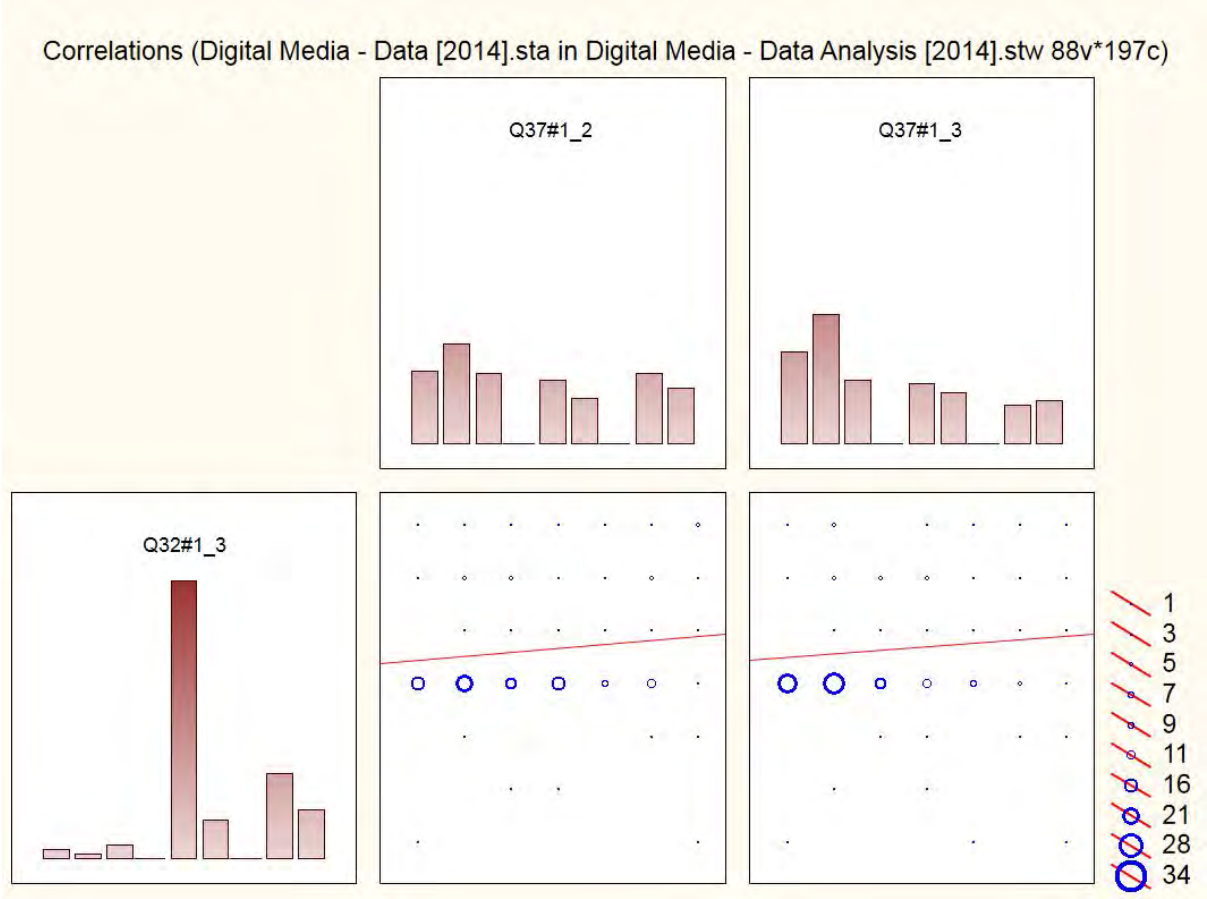


2.1.7 H_8 : "Availability" / "Attitude"

2.1.7.1 "Availability" of Content from The "Pirate Bay" / "Attitude"

Variable	Spearman Rank Order MD pairwise deleted Marked correlations are significant at p <.05000		
	Q32#1_3	Q37#1_2	Q37#1_3
Q32#1_3	1.000000	0.130555	0.117879
Q37#1_2	0.130555	1.000000	0.845168
Q37#1_3	0.117879	0.845168	1.000000

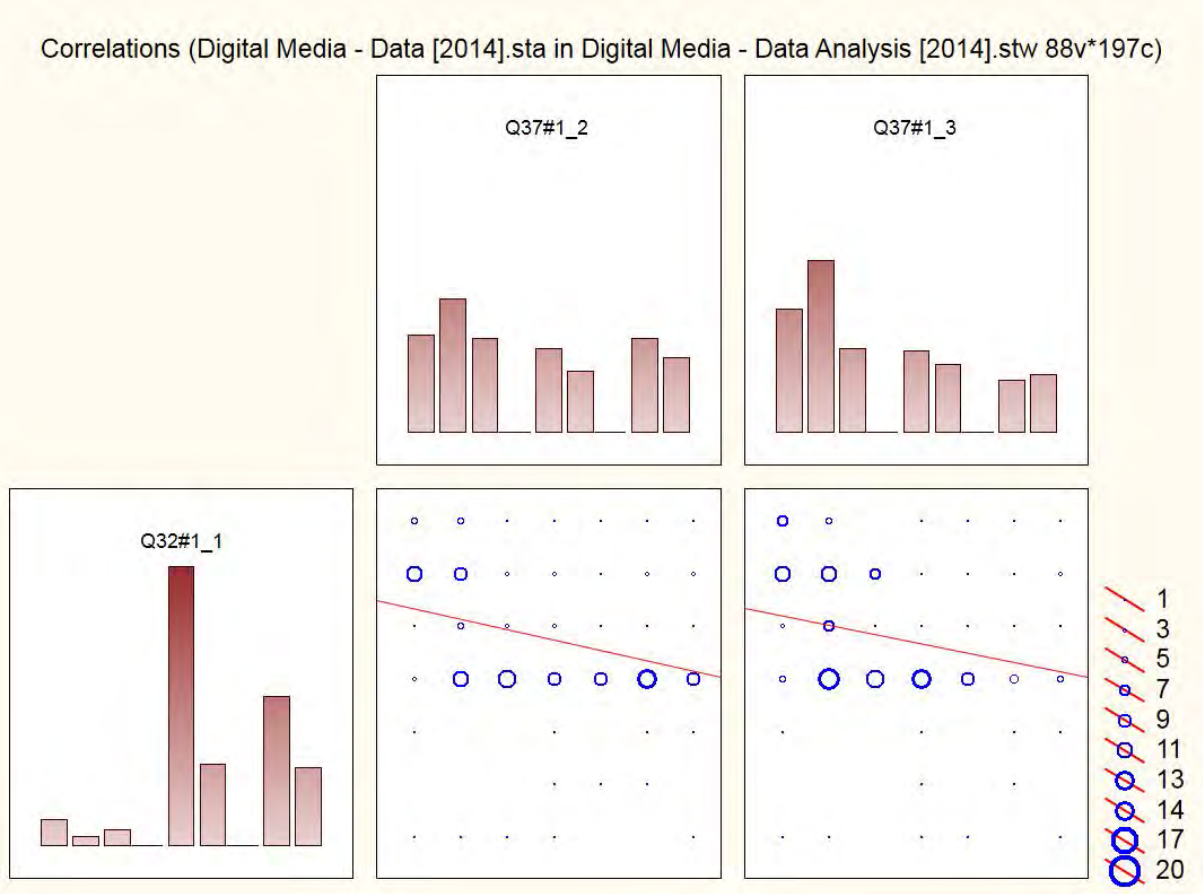
Pair of Variables	Spearman Rank Order Correlations MD pairwise deleted Marked correlations are significant at p <.05000			
	Valid N	Spearman R	t(N-2)	p-value
Q32#1_3 & Q37#1_2	197	0.130555	1.838841	0.067459
Q32#1_3 & Q37#1_3	197	0.117879	1.657652	0.098996



2.1.7.2 "Availability" of Content from The "iTunes" / "Attitude"

Variable	Spearman Rank Order Correlations (Digital Media - Data [2014].sta in Digital Media - Data Analysis [2014].stw) MD pairwise deleted Marked correlations are significant at p <.05000		
	Q32#1_1	Q37#1_2	Q37#1_3
Q32#1	1.000000	-0.312521	-0.293732
Q37#1_2	-0.312521	1.000000	0.845168
Q37#1_3	-0.293732	0.845168	1.000000

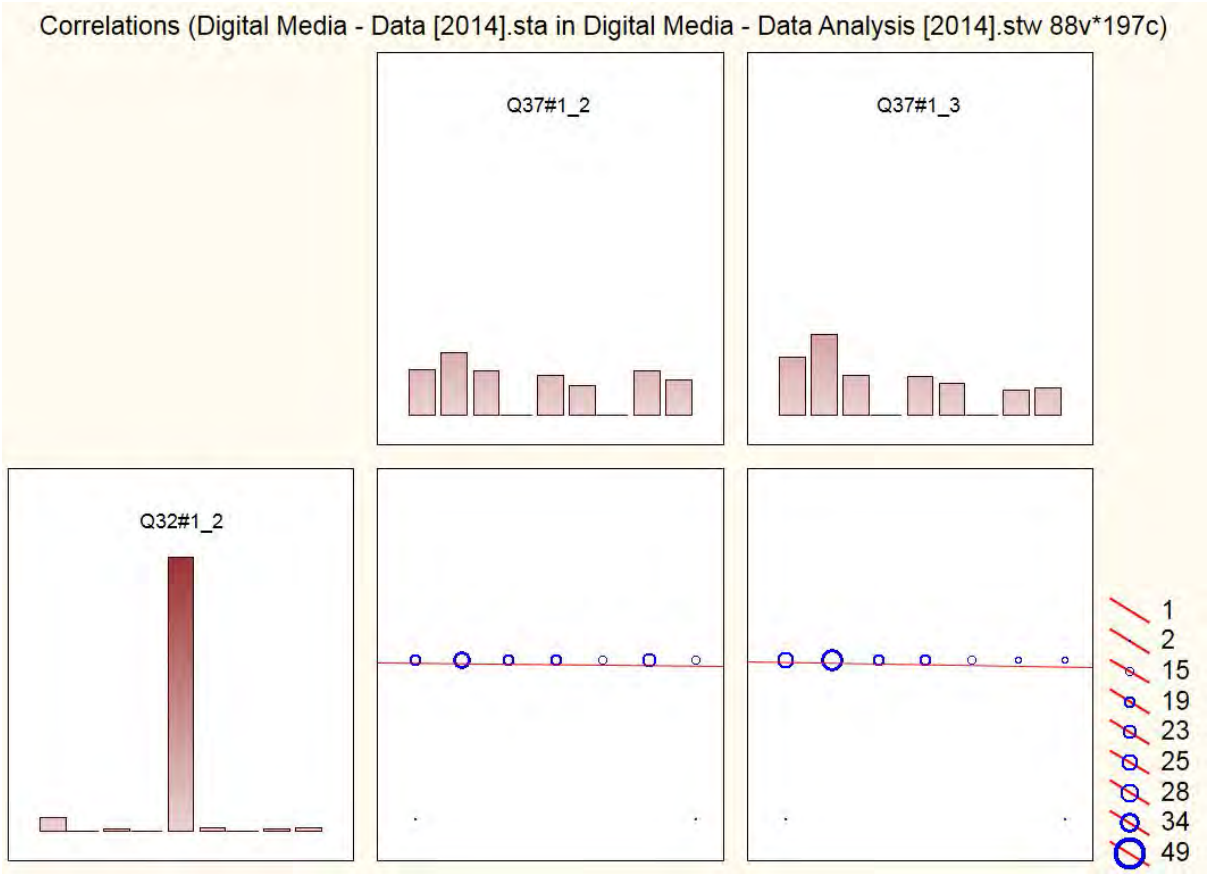
Pair of Variables	Spearman Rank Order MD pairwise deleted Marked correlations are significant at p <.05000			
	Valid N	Spearman R	t(N-2)	p-value
Q32#1_1 & Q37#1_2	197	-0.312521	-4.59423	0.000008
Q32#1_1 & Q37#1_3	197	-0.293732	-4.29102	0.000028



2.1.7.3 "Availability" of Content from The "Deezer" / "Attitude"

Variable	Spearman Rank Order Correlations MD pairwise deleted Marked correlations are significant at p <.05000		
	Q32#1_2	Q37#1_2	Q37#1_3
Q32#1_2	1.000000	-0.031115	-0.031317
Q37#1_2	-0.031115	1.000000	0.845168
Q37#1_3	-0.031317	0.845168	1.000000

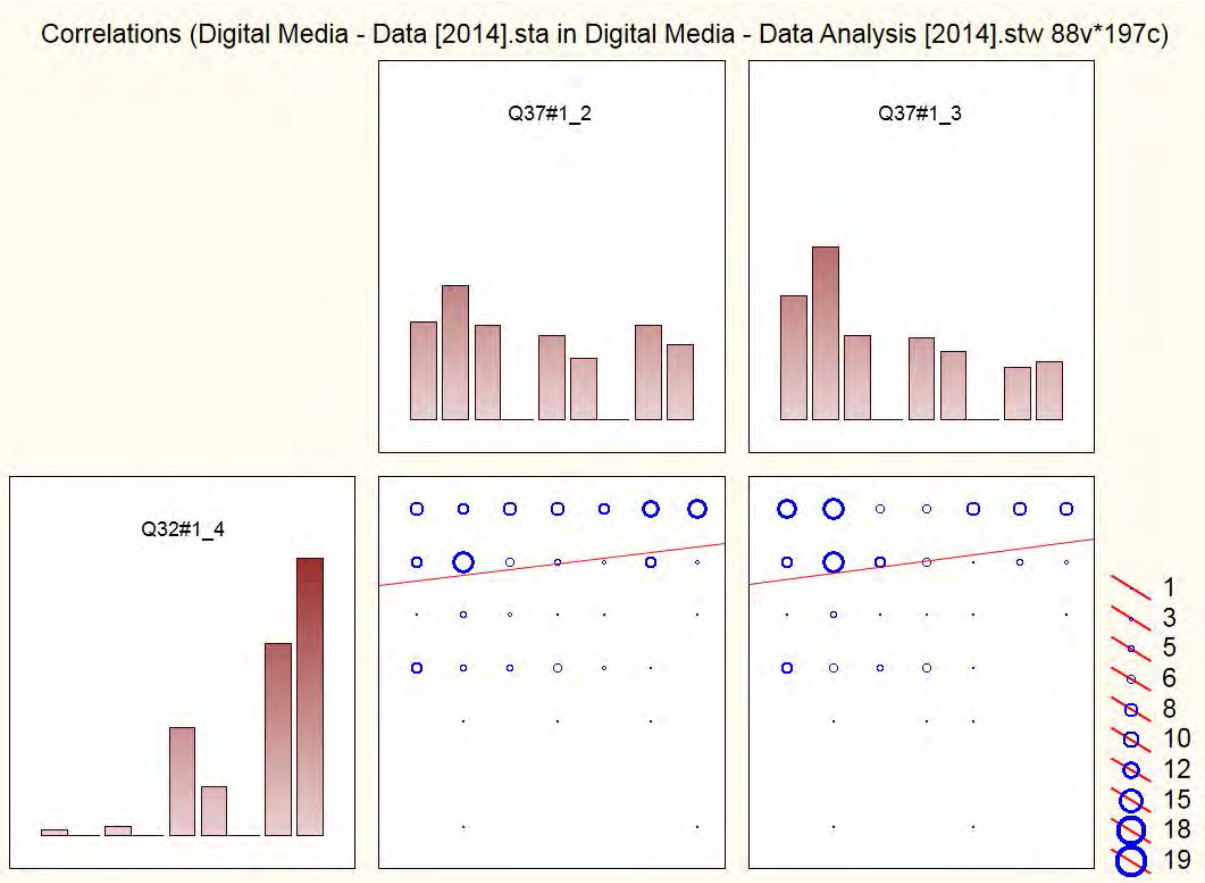
Pair of Variables	Spearman Rank Order Correlations MD pairwise deleted Marked correlations are significant at p <.05000			
	Valid N	Spearman R	t(N-2)	p-value
Q32#1_2 & Q37#1_2	196	-0.031115	-0.433598	0.665062
Q32#1_2 & Q37#1_3	196	-0.031317	-0.436410	0.663024



2.1.7.4 "Availability" of Content from The "YouTube" / "Attitude"

Variable	Spearman Rank Order MD pairwise deleted Marked correlations are significant at p <.05000		
	Q32#1_4	Q37#1_2	Q37#1_3
Q32#1_4	1.000000	0.215103	0.177021
Q37#1_2	0.215103	1.000000	0.845168
Q37#1_3	0.177021	0.845168	1.000000

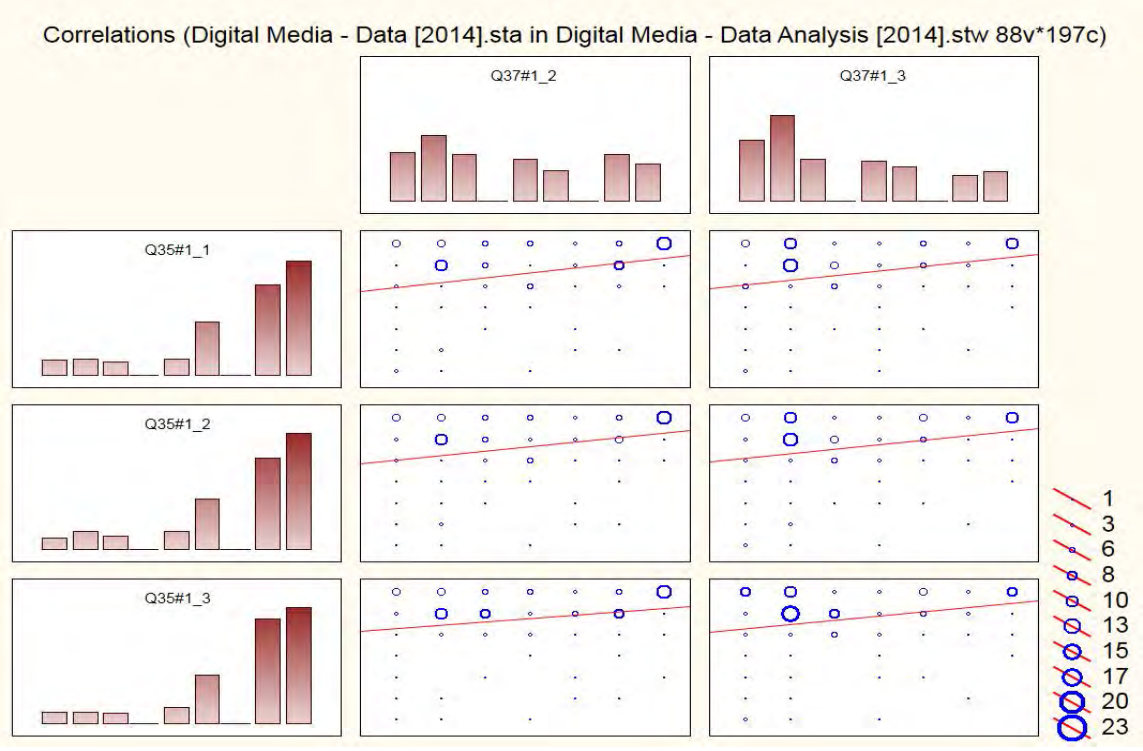
Pair of Variables	Spearman Rank Order Correlations MD pairwise deleted Marked correlations are significant at p <.05000			
	Valid N	Spearman R	t(N-2)	p-value
Q32#1_4 & Q37#1_2	197	0.215103	3.075742	0.002401
Q32#1_4 & Q37#1_3	197	0.177021	2.511628	0.012829



2.1.8 H_9 : "Technical Ability" / "Attitude"

Variable	Spearman Rank Order MD pairwise deleted Marked correlations are significant at p <.05000 Q35#1_1	Q35#1_2	Q35#1_3	Q37#1_2	Q37#1_3
Q35#1_1	1.000000	0.959471	0.895848	0.262147	0.245623
Q35#1_2	0.959471	1.000000	0.936335	0.253976	0.238577
Q35#1_3	0.895848	0.936335	1.000000	0.200004	0.211056
Q37#1_2	0.262147	0.253976	0.200004	1.000000	0.845168
Q37#1_3	0.245623	0.238577	0.211056	0.845168	1.000000

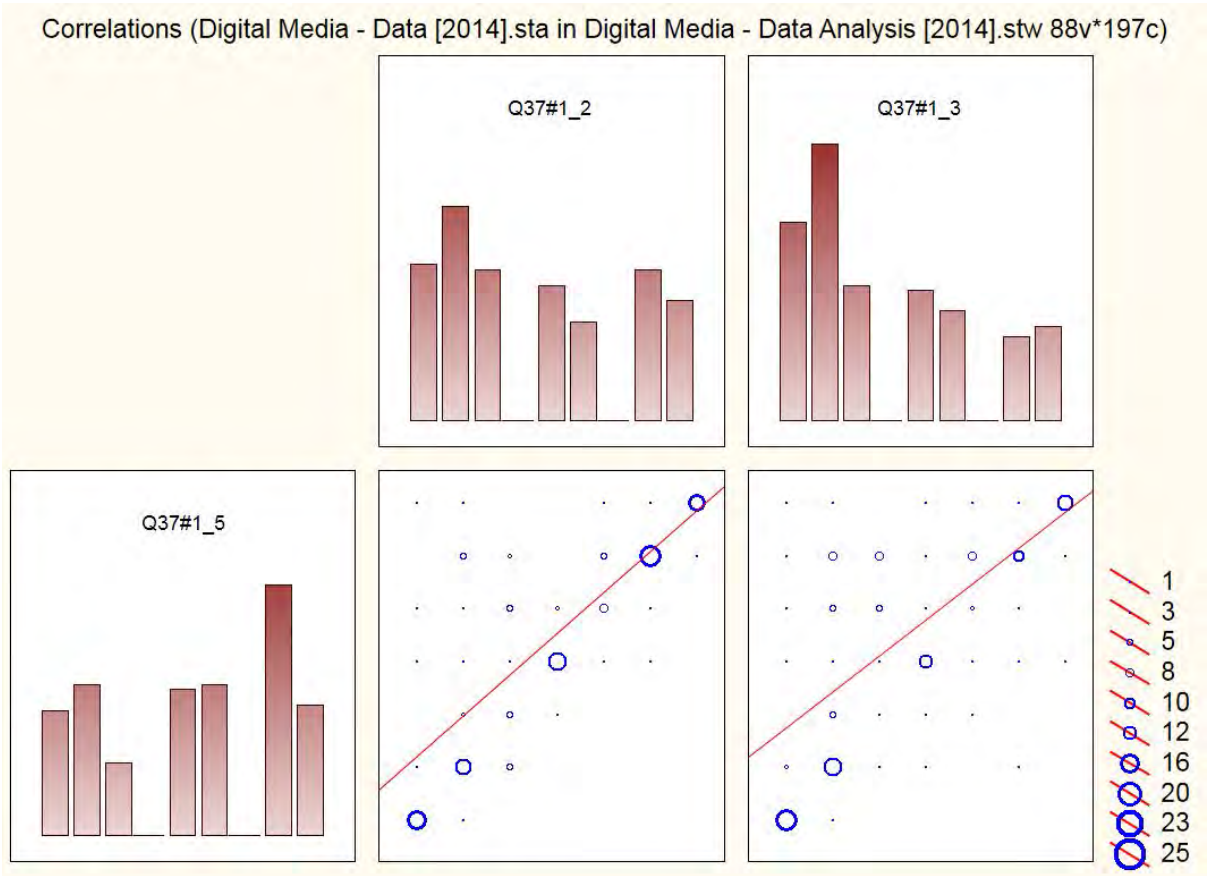
Pair of Variables	Spearman Rank Order Correlations MD pairwise deleted Marked correlations are significant at p <.05000 Valid N	Spearman R	t(N-2)	p-value
Q35#1_1 & Q37#1_2	197	0.262147	3.793346	0.000198
Q35#1_1 & Q37#1_3	197	0.245623	3.538331	0.000503
Q35#1_2 & Q37#1_2	197	0.253976	3.666810	0.000317
Q35#1_2 & Q37#1_3	197	0.238577	3.430605	0.000735
Q35#1_3 & Q37#1_2	197	0.200004	2.850504	0.004835
Q35#1_3 & Q37#1_3	197	0.211056	3.015154	0.002910



2.1.9 H_{12} : "Subjective Norms" / "Attitude"

Variable	Spearman Rank Order MD pairwise deleted Marked correlations are significant at p <.05000		
	Q37#1_5	Q37#1_2	Q37#1_3
Q37#1_5	1.000000	0.783946	0.673309
Q37#1_2	0.783946	1.000000	0.845168
Q37#1_3	0.673309	0.845168	1.000000

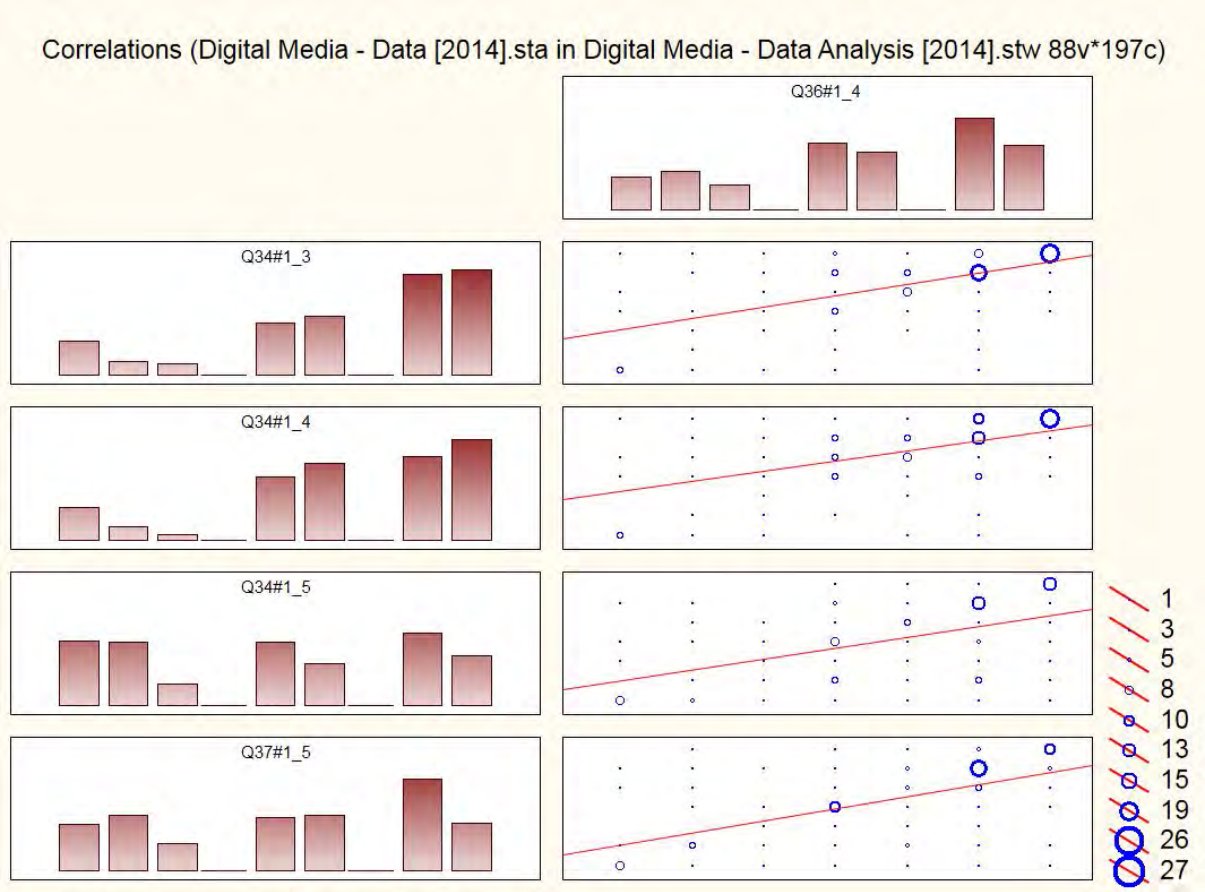
Pair of Variables	Spearman Rank Order MD pairwise deleted Marked correlations are significant at p <.05000			
	Valid N	Spearman R	t(N-2)	p-value
Q37#1_5 & Q37#1_2	197	0.783946	17.63321	0.000000
Q37#1_5 & Q37#1_3	197	0.673309	12.71673	0.000000



2.1.10 H_{13} : "Habit" / "Behaviour"

Variable	Spearman Rank Order MD pairwise deleted Marked correlations are significant at p <.05000 Q34#1_3	Q34#1_4	Q34#1_5	Q37#1_5	Q36#1_4
Q34#1_3	1.000000	0.823109	0.608955	0.601959	0.568857
Q34#1_4	0.823109	1.000000	0.528152	0.512031	0.533654
Q34#1_5	0.608955	0.528152	1.000000	0.556166	0.517112
Q37#1_5	0.601959	0.512031	0.556166	1.000000	0.584918
Q36#1_4	0.568857	0.533654	0.517112	0.584918	1.000000

Pair of Variables	Spearman Rank Order MD pairwise deleted Marked correlations are significant at p <.05000 Valid N	Spearman R	t(N-2)	p-value
Q34#1_3 & Q36#1_4	197	0.568857	9.65869	0.000000
Q34#1_4 & Q36#1_4	197	0.533654	8.81169	0.000000
Q34#1_5 & Q36#1_4	197	0.517112	8.43665	0.000000
Q37#1_5 & Q36#1_4	197	0.584918	10.07030	0.000000



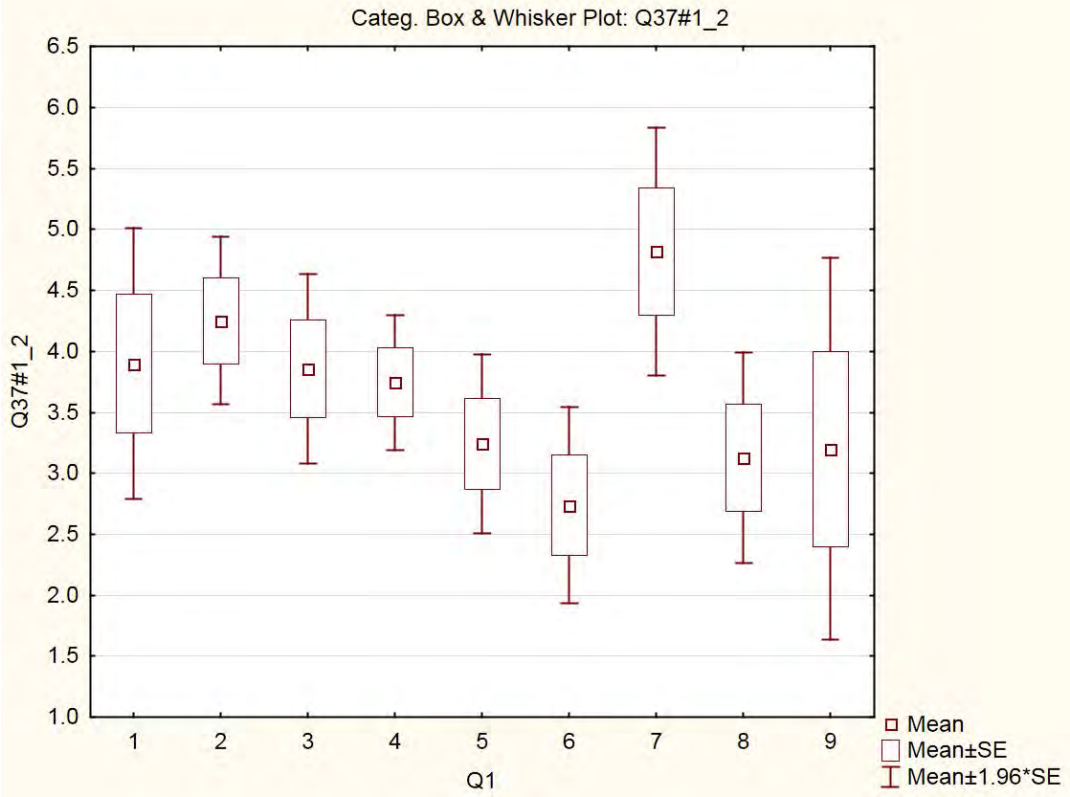
2.2 ANOVA

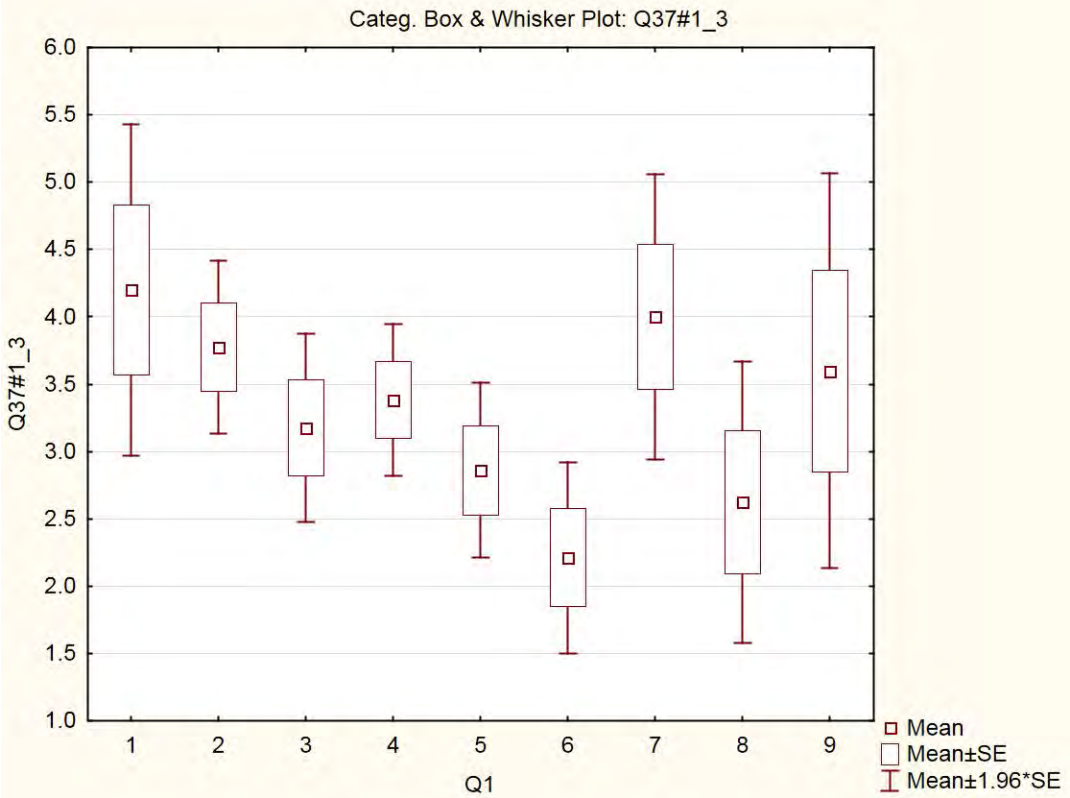
2.2.1 H_{10} : Characteristics of Former Students

2.2.1.1 "Age" / "Attitude"

Variable	Analysis of Variance Marked effects are significant at p < .05000							
	SS Effect	df Effect	MS Effect	SS Error	df Error	MS Error	F	p
Q37#1_2	54.57401	8	6.821751	735.0707	188	3.909950	1.744716	0.090596
Q37#1_3	55.45416	8	6.931770	673.4697	188	3.582286	1.935013	0.057032

	Breakdown Table of Descriptive Statistics N=197 (No missing data in dep. var. list)						
	Q1	Q37#1_2 Means	Q37#1_2 N	Q37#1_2 Std.Dev.	Q37#1_3 Means	Q37#1_3 N	Q37#1_3 Std.Dev.
	1	3.900000	10	1.791957	4.200000	10	1.988858
	2	4.250000	40	2.215910	3.775000	40	2.081512
	3	3.857143	28	2.103160	3.178571	28	1.886670
	4	3.744681	47	1.927694	3.382979	47	1.973225
	5	3.241379	29	2.011665	2.862069	29	1.787339
	6	2.736842	19	1.790162	2.210526	19	1.583910
	7	4.818182	11	1.721522	4.000000	11	1.788854
	8	3.125000	8	1.246423	2.625000	8	1.505941
	9	3.200000	5	1.788854	3.600000	5	1.673320
	All Grps	3.720812	197	2.007187	3.294416	197	1.928471

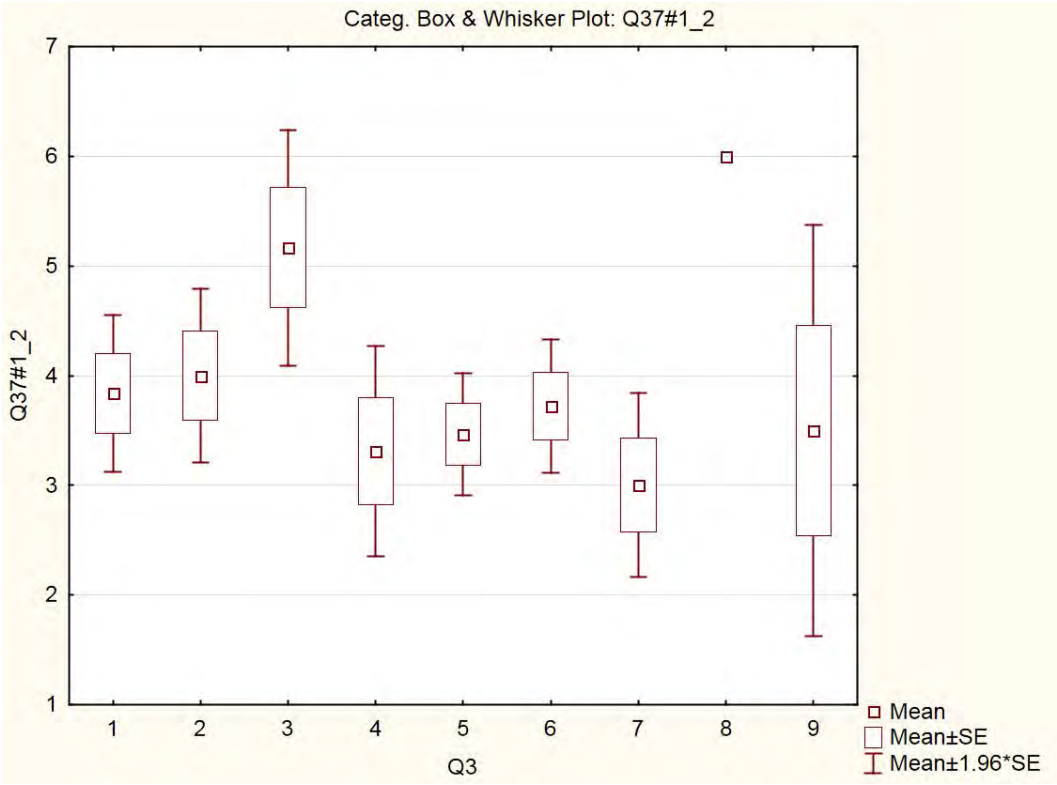

Categ. Box & Whisker Plot: Q37#1_2
Q37#1_2
6.5
6.0
5.5
5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
1
2
3
4
5
6
7
8
9
Q1
Mean
Mean±SE
Mean±1.96*SE

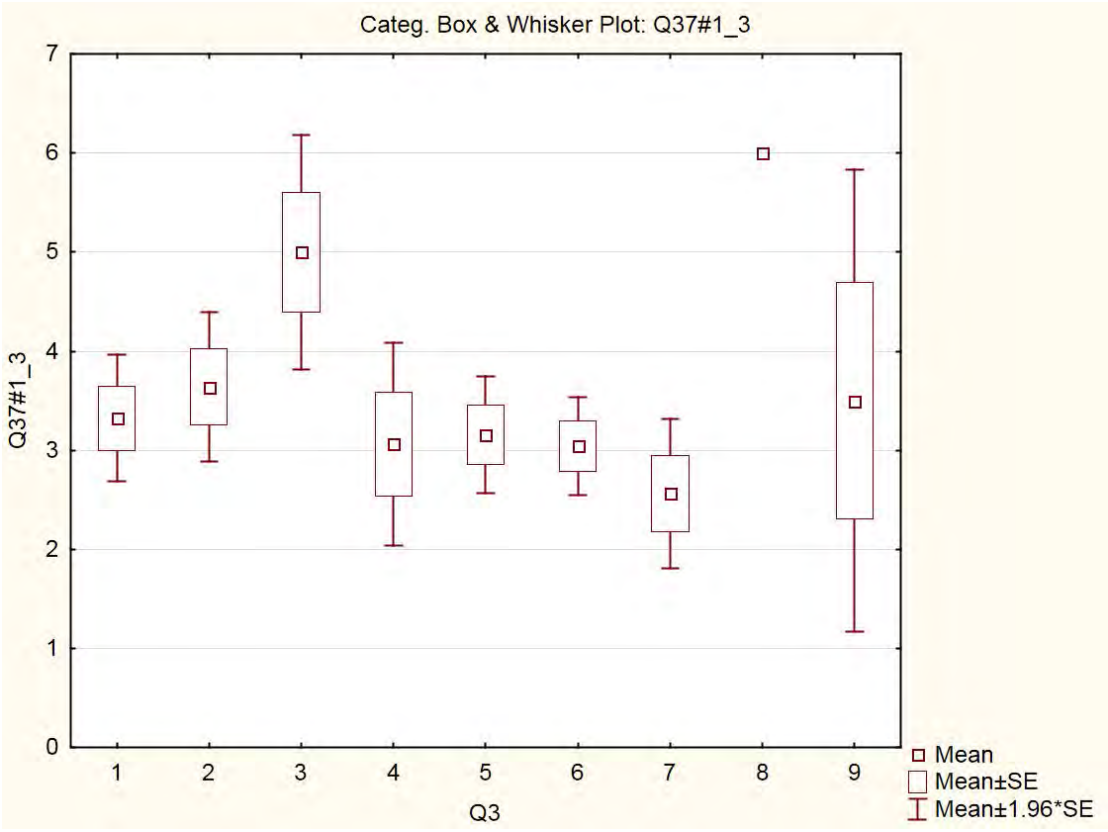

Categ. Box & Whisker Plot: Q37#1_3
Q37#1_3
6.0
5.5
5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
1
2
3
4
5
6
7
8
9
Q1
Mean
Mean±SE
Mean±1.96*SE

2.2.1.2 "Education" / "Attitude"

Variable	Analysis of Variance Marked effects are significant at p < .05000							
	SS Effect	df Effect	MS Effect	SS Error	df Error	MS Error	F	p
Q37#1_2	46.74270	8	5.842837	742.9020	188	3.951606	1.478598	0.167376
Q37#1_3	58.68866	8	7.336082	670.2352	188	3.565081	2.057760	0.041956

Breakdown Table of Descriptive N=197 (No missing data in dep. var. list)						
Q3	Q37#1_2 Means	Q37#1_2 N	Q37#1_2 Std.Dev.	Q37#1_3 Means	Q37#1_3 N	Q37#1_3 Std.Dev.
1	3.838710	31	2.034646	3.322581	31	1.814517
2	4.000000	25	2.020726	3.640000	25	1.933908
3	5.166667	12	1.898963	5.000000	12	2.088932
4	3.312500	16	1.956826	3.062500	16	2.080665
5	3.466667	45	1.914063	3.155556	45	2.010829
6	3.723404	47	2.123391	3.042553	47	1.731517
7	3.000000	16	1.712698	2.562500	16	1.547848
8	6.000000	1	0.000000	6.000000	1	0.000000
9	3.500000	4	1.914854	3.500000	4	2.380476
All Grps	3.720812	197	2.007187	3.294416	197	1.928471



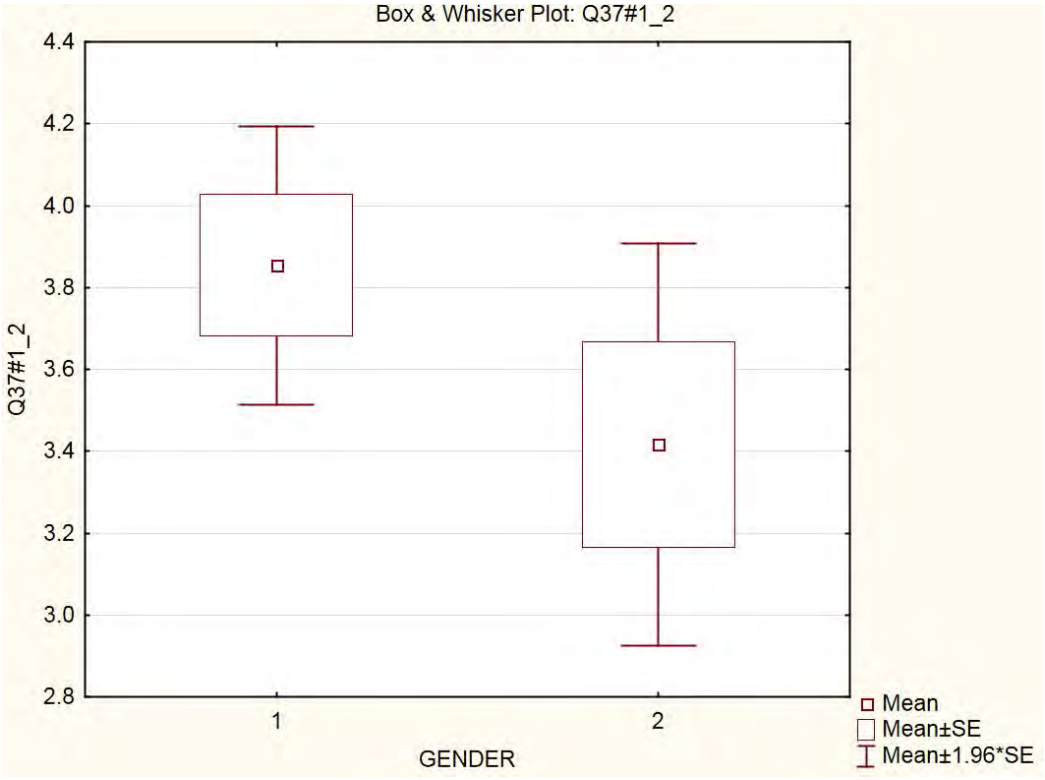


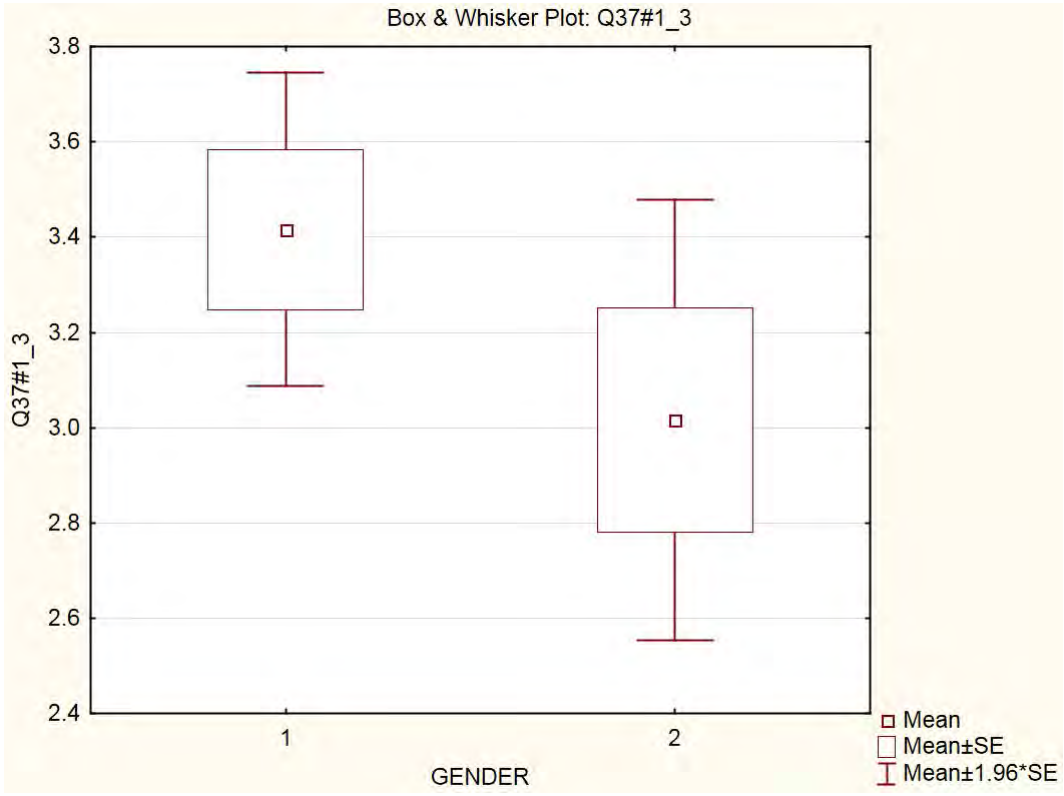
2.3 T-Test

2.3.1 H_{13} : "Gender" / "Attitude"

Males are represented by "1" and females" by "2".

Variable	T-tests; Grouping: Group 1: 1 Group 2: 2										
	Mean 1	Mean 2	t-value	df	p	Valid N 1	Valid N 2	Std.Dev. 1	Std.Dev. 2	F-ratio Variances	p Variances
Q37#1_2	3.854015	3.416667	1.411033	195	0.159828	137	60	2.027532	1.942318	1.089669	0.720987
Q37#1_3	3.416058	3.016667	1.340510	195	0.181639	137	60	1.965296	1.827211	1.156853	0.532949


Box & Whisker Plot: Q37#1_2
4.4
4.2
4.0
3.8
3.6
3.4
3.2
3.0
2.8
Q37#1_2
1
2
GENDER
Mean
Mean±SE
Mean±1.96*SE


Box & Whisker Plot: Q37#1_3
3.8
3.6
3.4
3.2
3.0
2.8
2.6
2.4
Q37#1_3
1
2
GENDER
Mean
Mean±SE
Mean±1.96*SE

Appendix G: Cover Letter

Department of Information Systems

Leslie Commerce Building
Engineering Mall, Upper Campus
OR
Private Bag. Rondebosch 7701
Tel: +27 (0) 21 650 4028 Fax: +27 (0) 21 650 2280
Internet: http://www.commerce.uct.ac.za/informationsystems/

1 November 2013

Dear Sir/Madam,

I am currently enrolled in a part-time Masters programme in Information Systems at the University of Cape Town and am required to conduct a research project as part of this course.

The title of my research is *'An Investigation of the Effect that the Availability of Legitimate Channels for Acquiring Digital Music has on Piracy in South Africa'* and the purpose of this research is to ascertain whether the digital music services (streaming, download) currently available to South Africans have been embraced as an alternative to practices such as peer-to-peer file sharing.

This research will be conducted by means of an anonymous web-based survey in conjunction with a number of interviews with digital music consumers and recording artists (musicians).

Participation in this research is entirely voluntary and would be greatly appreciated. This research is being conducted for academic purposes and the results of this research will be submitted as part of my final deliverable; however, respondents and all of their responses will be treated as confidential and remain anonymous. This research has been approved by the Commerce Faculty Ethics in Research Committee.

If you are a digital music consumer or a recording artist (with published album(s)) willing to be interviewed (approximately 30 minutes) for this study, please complete the attached Interview Consent form and I shall contact you to arrange an interview slot.

Thank you for your cooperation and time.

Should you have any questions regarding this research, please feel free to contact the researcher.

Sincerely,

Stuart Hope

Masters Student
Department of Information Systems
University of Cape Town
Email: stuarthope@gmail.com

Prof. Derek Smith

Research Supervisor
Department of Information Systems
University of Cape Town
Email: Derek.Smith@uct.ac.za

Appendix H: Interview Consent Form

Interview Subject Consent Form

I, _____, consent to be interviewed and to have my responses recorded in order to participate in the research study titled ***'An Investigation of the Effect that the Availability of Legitimate Channels for Acquiring Digital Music has on Piracy in South Africa'***.

I am aware that my participation in this study is voluntary and I am participating of my own free will. I acknowledge that I may withdraw from this research at any time should I no longer wish to participate.

- ☐ I wish to remain anonymous.

Signature _____ Date _____

Appendix I: UCT Ethics Form

UNIVERSITY OF CAPE TOWN
FACULTY OF COMMERCE
Igniting Knowledge and Opportunity

Commerce Faculty Ethics in Research Committee

Updated Ethics Form March 2013

Any individual in the Faculty of Commerce at the University of Cape Town undertaking any research that involves the use of human subjects, or research that may hold ethical consequences for the University of Cape Town, is required to complete this form and obtain approval before conducting research. The completed form should be submitted as an electronic document to departmental Ethics Committee representatives for submission to the Commerce Faculty Ethics in Research Committee. Please also submit electronic copies of your research proposal, informed consent form or other information used to obtain consent, and any questionnaires or other material shown to subjects.

1. PROJECT DETAILS		
Project title: An Investigation of the Effect that the Availability of Legitimate Channels of Acquiring Digital Music has on Piracy in South Africa		
Principal Researcher: Stuart Hope	**Email address:** stuarthope@gmail.com	
Research Supervisor: Derek Smith	**Email address:** Derek.Smith@uct.ac.za	
Co-researcher(s):	**Email address(es):**	
Brief description of the project: The primary aim of this research is to establish whether the availability of legitimate channels for acquiring digital music has an effect on (digital music) piracy in a South African context. In order to achieve this goal this research will attempt to investigate respondents' awareness of the availability of some of the legitimate sources of acquiring digital music, such as streaming and download services, available to South Africans. It will further attempt to establish respondents' attitude towards, and use of these services relative to their use of available illegal sources.		

Data collection: (please select)

✓ Interviews ✓ Questionnaire ☐ Experiment ✓ Secondary data ☐ Observation

☐ Other (please specify): _____

Procedure: (please describe)

The primary source of data in this study is that of anonymous questionnaire responses facilitated by a web-based survey instrument. Further data will be gathered by means of a limited number of interviews with recording artists/musicians as well as digital music consumers. These interview subjects will participate of their own free will and their identities and responses will remain confidential. Potential interview candidates will indicate their willingness to be interviewed by means of an optional section on the web-based questionnaire. The results of this research will be compared against findings of similar studies conducted in other countries.

2. PARTICIPANTS

Characteristics of participants:

Gender:	Any
Race / Ethnicity:	Any
Age range:	Adults (aged 18 and above)
Location:	Western Cape and Gauteng, South Africa
Other:	

Race / Ethnicity:

Have you included a "**Prefer not to Answer**" response category in your questionnaire? (please select)

☐ Yes ☐ No ✓ Not applicable

If you answered 'No' why not?

Affiliations of participants: (please select)

☐ Company employees ☐ UCT staff ✓ General public ☐ UCT Students

☐ Other (please specify): _____

If your sample includes children (aged 18 and below), mentally incompetent persons, or legally restricted groups please explain below why it is necessary to use these particular groups. If subjects are minors or mentally incompetent, please describe how and by whom permission will be granted? If you are including children under the age of 18 and are not getting parental consent, please explain why you believe that their parents would consent if it was possible to contact them.

3. ORGANISATIONAL PERMISSION

If your research is being conducted within a specific organisation, please provide organisational permission or explain how permission will be obtained.

Are you making use of UCT students as respondents for your research? (please select) ☐ Yes ✓ No

If yes, have you contacted Executive Director: Student Affairs for permission? (please select) ☐ Yes ☐ No

Was approval granted? (please select) ☐ Yes ☐ No ☐ Awaiting a response

Are you making use of UCT staff as respondents for your research? (please select) ☐ Yes ✓ No

If yes, have you contacted Executive Director: Human Resources for permission? (select) ☐ Yes ☐ No

Was approval granted? (please select) ☐ Yes ☐No ☐Awaiting a response

Contact Emails: Executive Director: Human Resources (**Miriam.Hoosain@uct.ac.za)**
Executive Director: Student Affairs (**Moonira.Khan@uct.ac.za)**

4. INFORMED CONSENT

What type of consent will be obtained from study participants?

✓ Written Consent - for interviews

✓ Anonymous Survey

☐ oral consent (please justify)

☐ other (please specify)

How and where will consent/permission be recorded?

Interview consent documents will signed and stored in a secure location.

5. CONFIDENTIALITY OF DATA

What precautions will be taken to safeguard identifiable records of individuals? Please describe specific procedures to be used to provide confidentiality of data by you and others, in both the short and long run. This question also applies if you are using secondary sources of data that is not anonymous.

Each interview subject's name will be replaced by an alias in the interview transcript and subsequently in the dissertation.

Signed interview consent forms will be stored in a secure location such as a physical safe.

Digital recordings of interviews will be stored (exclusively) on a flash disk which will be stored along with the consent forms.

Interview subjects' identities and their responses will be treated as confidential.

6. RISK TO PARTICIPANTS

Does the proposed research pose any physical, psychological, social, legal, economic, or other risks to study participants you can foresee, both immediate and long range? (please select)

☐ Yes ✓ No

If yes, answer the following questions:

1. Describe in detail the nature and extent of the risk and provide the rationale for the necessity of such risks
2. Outline any alternative approaches that were or will be considered and why alternatives may not be feasible in the study
3. Outline whether and why you feel that the value of information to be gained outweighs the risks

1.
2.
3.

What authorship agreement have you reached with your co-researchers or supervisor?

☐ This research is not intended for publication

✓ Standard authorship agreement (principal researcher first author, co-researcher(s) and supervisor(s) co-authors)

☐ Customised agreement (please specify below):

I certify that we have read the UCT Authorship Policy, and Commerce Faculty Authorship Guidelines ✓ (http://www.commerce.uct.ac.za/Commerce/Information/research.asp**)**

I certify that that the material contained herein is truthful and that all co-researchers and supervisors are ✓ aware of the contents thereof.

I understand that it is my responsibility to conduct research in accordance with the ethical requirements of ✓ UCT.

_____

Applicant's signature:

Date: 24/10/2013

CHECKLIST	SELECT
A full copy of a research proposal or a literature review with methodology is attached	✓
Research proposal / interview schedules / cover letters / questionnaires / forms and other materials used in the study are attached / consent form	✓
Organisational consent letter / UCT student or staff approval letter	**N/A**
On your cover letter to your questionnaire have you included the following?	
1. The following UCT Logo 	✓
2. A sentence explaining the aim of the research	✓
3. Sentences of a similar nature to below must be included in the cover letter or consent form:	
This research has been approved by the Commerce Faculty Ethics in Research Committee.	✓
Your participation in this research is voluntary. You can choose to withdraw from the research at any time.	✓
The questionnaire will take approximately X minutes to complete	✓
You will not be requested to supply any identifiable information, ensuring anonymity of your responses.	✓
Due to the nature of the study you will need to provide the researchers with some form of identifiable information however, all responses will be confidential and used for the purposes of this research only.	**OR** ☐
Should you have any questions regarding the research please feel free to contact the researcher (insert contact details).	✓
4. Have you scanned in your signature for the last section of the form?	✓

For Ethics committee representative only
Recommendation(s): **Signature:** **Date:**
For Ethics committee chairperson only
Recommendation: **Signature:** **Date:**